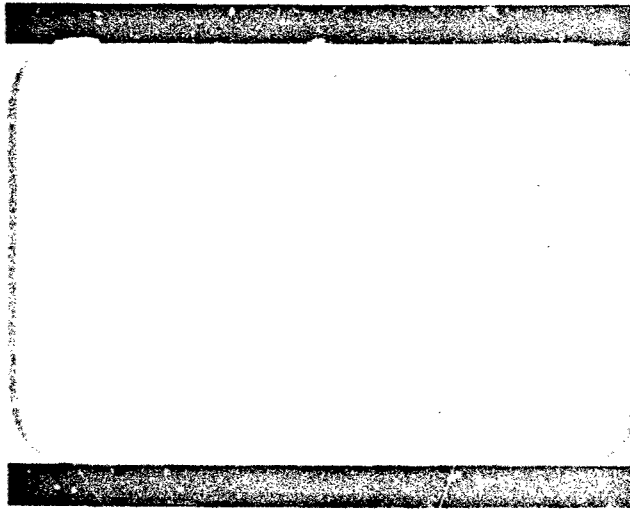
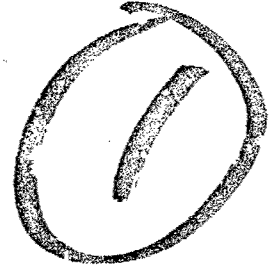


SAMSO-TR-76-180

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**GENERAL DYNAMICS**  
*Convair Division*

4.5



A2136-1 REV. 5-65

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PROPELLANT UTILIZATION SYSTEM

AIRBORNE

DIFFICULTIES REVIEW

GENERAL DYNAMICS  
Convair Division

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(6) DIFFICULTIES REVIEW ATLAS BOOSTER  
AIRBORNE AND GROUND SUPPORT SYSTEMS.

BOOK II.

GENERAL INFORMATION.

Volume I.

Propellant Utilization System Airborne  
Difficulties Review.

Per Hx. on file

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Approved by

B. B. Shaffer

Chief of reliability Engineering

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BOOK II - DIFFICULTIES REVIEW - AIRBORNE CONTAINS THE FOLLOWING VOLUMES

VOLUME I	AIRFRAMES
*VOLUME II	ABORT SENSING AND IMPLEMENTATION SYSTEM
VOLUME III	AUTOPILOT
*VOLUME IV	AUXILIARY POWER SOURCE
VOLUME V	ELECTRICAL
*VOLUME VI	GUIDANCE
VOLUME VII	HYDRAULICS
VOLUME VIII	INSTRUMENTATION
VOLUME IX	PNEUMATICS
VOLUME X	PROPELLANT UTILIZATION
VOLUME XI	PROPULSION INTERFACE
VOLUME XII	PROPULSION
VOLUME XIII	RANGE SAFETY COMMAND

\*VOLUMES II, IV AND VI UNDER ONE COVER.



## GENERAL INFORMATION

The Difficulties Review encompasses problems gathered from the factory, the field, (ETR and WTR) and UTP. The factory difficulties are limited to "selloff" and rerun composite testing.

In the UTP area, the difficulties were excerpted from Central Test Control Reports, Problem Reports, Supplementary History Sheets and Problem Review Reports.

Field problems for the Difficulties Review have been limited to captive flights, flight readiness firings, actual countdown dual propellant loading, quad tanking, component reliability testing, and flight acceptance composite tests. Difficulties called out in the search for critical weakness program was not documented.

GSE problems shall be limited to ETR Complex 12, 13, 36A and 36B for the present edition. Hereafter only booster difficulties shall be maintained.

Failure analysis reports cover difficulties from the field and factory and may complement the information above.

The GSE Difficulties Review, Book 1 contains 14 Volumes, one volume for each system, under one cover. Each volume is appropriately indexed.

The Airborne Difficulties Review, Book 2 contains 13 volumes. Each volume is under separate cover except Volumes II, IV and VI. Volumes II, IV, and VI are under one cover because of the limited material contained in each volume. All volumes are appropriately indexed.

A guide to facilitate interpretation of data in the Difficulties Review (GSE and Airborne) is part of each book or volume.

# DIFFICULTIES REVIEW PROPELLANT UTILITY/LOADING GDC ACOUSTICS-AIRBORNE

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GENERAL DYNAMICS  
Convair Division

Subject: Explanatory Information For Use of Difficulties Review (DR)  
Data Tab Runs

This information has been prepared to facilitate use of the DR. It is not intended to describe how the DR was prepared nor the scope of the existing effort.

The Difficulties Review (DR) is presented on a form compatible with automated data processing and printout.

Appearing at the top of the page (outside of blocked-in areas) is the identification of the system and whether it is Airborne or Ground Support Equipment. Appearing with this identification is the date of the document and the page number.

On the right hand side outside of the blocked area, appears the abstract number. An abstract number is assigned to each item of the Difficulty Review to facilitate traceability to the original input document.

Appearing under the major identification are blocks wherein the information on component or system difficulty is identified and explained. Attached are samples of pages coded for reference to the following definitions and explanations:

CODE

EXPLANATION

①

This group of blocks callout system, subsystem, test/report number, failed component name, difficulty (Dif) data source, and GDC part number if applicable. Also called out here is the vehicle number, if applicable, and the date of difficulty.

In the same row, the site location, and in case of a flight, captive flight, or countdown, the time will be entered.

The block containing PRI and OTH refer to whether or not the failure is primary or a secondary failure. A secondary failure is to be interpreted as caused by another discrepancy.

The last block in this row is obvious and requires no further explanation:

②

Refers to a major system of the launch vehicle.

③

Refers to subsystem of a major vehicle system if applicable, (Booster, sustainer, etc).

## GENERAL DYNAMICS

### Convair Division

<u>CODE</u>	<u>EXPLANATION</u>
(4)	Is a report number as opposed to type of report, (UTP, Countdown, Flight, FAR, etc.).
(5)	Is a type of report, such as a FAR, UTP, FRF, etc.
(6)	Refers to a component part by name.
(7)	Is a component piece part of the component and referred to by name, (plug, seal, wiring, diode, etc., only where applicable).
(8)	Is a GDC part number, if applicable.
(9)	Refers to a site or location at time of discrepancy on the component or vehicle system.
(10)	Is the vehicle on which discrepancy occurred. Vehicle number listed only if unit was installed on a vehicle at time of discrepancy.
(11)	Is the vendor part number, if applicable.
(12)	Is the vendor name, if applicable.
(13)	Is the failure caused by ther component or other system. This item defines the failure as secondary or not secondary.
(14)	<p>Refers to the primary failure. If item is labeled <u>no</u>, then item (13) may appear as a <u>yes</u>.</p> <p>Should item (13) appear as a <u>yes</u>, then an abstract will have been written to identify the cause of failure effecting the component referred to in the Difficulty Review, Item 6. It should be noted that a multiple failure may be recorded in these blocks, (yes/yes), or if a failure did not occur, (no/no).</p>
(15)	<p>Defines the failure mode, and if identifiable, the cause is called out. A careful review of the failure mode is made to determine effect on system operation and vehicle effort.</p>



## GENERAL DYNAMICS

### Convair Division

<u>CODE</u>	<u>EXPLANATION</u>
(16)	Defines the system effect. This effect is the result of the failure mode assigned to the component.
(17)	Defines the vehicle effect. This effect is a result of the failure mode and the result of the system effect.  It should be noted that corrective action may be taken whether or not the failure was confirmed.
(18)	Lists the corrective action. Taken by GDC, the vendor, or both.

GENERAL DYNAMICS  
CONVAIR DIVISION

19 FEB 1966

PAGE 0171

DIFFICULTIES REVIEW-HYDRAULIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE DIP	PRI OTM	VENDOR NAME VENDOR PART NO
1						
2	HYDRAULIC-A/B BOOSTER	27A3977 HYDRAULIC PUMP	643889	CONVAIR	YES	VICKERS NO AA-60884-R-8A
3						
4						
5						
6	HYDRAULIC-A/B BOOSTER	SLV-A9-1U-2487 HYDRAULIC PUMP/SEAL	FAR 87-08688-1	7108 841003	FACTORY	YES VICKERS NO AA-60884-R-8A
7						
8						
9						
10						
11						
12						
13						
14						
15	HYDRAULIC-A/B BOOSTER	SLV-JD-1D-239-7 BOOSTER HYDRAULIC PUMP/SEAL	FAR 87-08388-1	0071-01 840708	WTR	NO VICKERS YES AA-60884-R-8A
16						
17						
18	HYDRAULIC-A/B BOOSTER	68A1010.9 HYDRAULIC PUMP	UTP-PRT 87-08888-1	640814	CONVAIR	YES VICKERS NO AA-60884-R-8A
19						

CORRECTIVE ACTION-DEPT 141-3 TO PERFORM RETEST ON TWO (2) ADDITIONAL UNITS FROM LOT 19, TO DETERMINE LOT ACCEPTABILITY AND PROVIDE COMPARISON DATE.

FAILURE MODE-OUT OF-SPECIFICATION. 8/M 408-0430. PEAK TRANSIENT PRESSURES WERE 4100 TO 4800 PSIG, ALLOWABLE IS 4000 PSIG. NO FLOW TO FULL FLOW TIME IS 0.197 SECONDS. ALLOWABLE TIME IS 0.08 SECONDS.

CORRECTIVE ACTION-SUBMIT ECP 7488 TO REVISE TEST REQUIREMENTS TO PRACTICAL LEVELS.

FAILURE MODE-LEAK-EXTERNAL-CONTINUOUS OIL SEEPAGE WAS OBSERVED DURING CHECKOUT. CAUSED BY DEFECTIVE SEAL AT PUMP SEAL PRESSURE SENSING PORT.

CORRECTIVE ACTION-VENDOR REVIEWED STOCK OF O-RINGS AND INFORMED THEIR PERSONNEL OF CORRECT SEAL INSTALLATION PROCEDURE.

FAILURE MODE-LEAK EXTERNAL. PUMP WAS REPORTED LEAKING AFTER HOT FIRING TEST. CASE WAS OVERPRESSURIZED CAUSING DAMAGE TO CASE COVER SEAL.

CORRECTIVE ACTION-NO CORRECTIVE ACTION RECOMMENDED SINCE DAMAGE OCCURRED DUE TO INADVERTENT OVERPRESSURIZATION OF THE PUMP.

FAILURE MODE-LEAK EXTERNAL. 8/M 888-0668 FAILED TO MEET CASE BRAIN LEAKAGE REQUIREMENTS OF 0.8 GPM DURING PRT-127. THIS UNIT ALSO FAILED TO MEET PEAK TRANSIENT PRESSURE REQUIREMENTS. REFER TO FPR-0201.

SYSTEM EFFECT-NONE.

FA

GENERAL DYNAMICS  
CONVAIR DIVISION

PAGE 0002

15 FEB 1966

DIFFICULTIES REVIEW-HYDRAULIC SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-BOOSTER HYDRAULIC FILL AND BLEED PERFORMED.						
HYDRAULIC-A/G BOOSTER	FTAG887/P8-WO-Q1-QAC8	COMPOSITE-FRD/DPL	1310 348 830713	MO MO		
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. TEST WAS RUN WITHOUT BOOSTER HYDRAULICS BECAUSE BOOSTER HPU COULD NOT BE OPERATED REMOTELY. THIS WAS NOTED DURING AUTOPILOT FINAL CHECKS.						
SYSTEM EFFECT-OPERATION DOES NOT START.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-BOOSTER HPU HAND VALVE, MICROSWITCHES V3 AND V1 ADJUSTED TO MAKE WIPER CONTACT.						
HYDRAULIC-A/B BOOSTER	60C/BAF65-048/01-401-00-39	FLIGHT	390 8-1 830701 -32.5	YES MO		
FAILURE MODE-LEAK. B1 HYDRAULIC ACCUMULATOR PRESSURE EXHIBITED NO PRESSURE DIFFERENCE DURING THE OIL EVACUATION SEQ UENCE.						
SYSTEM EFFECT-POSSIBLE CONTAMINATION. ALTHOUGH THE FAILURE MODE INDICATES THE POSSIBILITY OF AIR IN THE BOOSTER HYD RUALIC SYSTEM, SYSTEM PERFORMANCE WAS SATISFACTORY.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE. THE POSSIBILITY OF CONTAMINATION WAS NOT CONFIRMED BY ANY OTHER TELEMETRY DATA.						
HYDRAULIC-A/B BOOSTER	60C/BAF65-039/02-401-00-177	FLIGHT	1770 8-5 830803 2.3	MO MO		
FAILURE MODE-OUT OF TOLERANCE. BOOSTER HYD ACCUM. PRESS MEASUR. H33P AND HYD. PUMP OUTLET PRESS. MEASUR "3P INDICAT ED AN INITIAL NORMAL PRESS. RISE BUT TO A LOWER (1310 PSIA) THAN NORMAL (1300 PSIA) PEAK AT 2.3 SEC. THE PRESS. THEN DECAYED TO 8720 PSIA DURING NEXT 1.3 SEC. SPECIFIC CAUSE UNKNOWN BUT SYMPTOMATIC OF UNUSUALLY HEAVY DEMAND ON SYSTE M.						
SYSTEM EFFECT-OPERATION TOO LOW. BOOSTER HYDRAULIC PRESS. LOWER THAN NORMAL FOR A TIME PERIOD OF -2.3 SEC TO 1.3 S.E C. NO ADVERSE EFFECT NOTED ON SYSTEM PERFORMANCE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
HYDRAULIC-A/B BOOSTER	60/C22M85-019-0A1047-/L6-7MO-01-71	COMPOSITE-FRD/DPL	7107 2-4 830410	YES MO		

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13 JUN 1968

GENERAL DYNAMICS  
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VEN/LOP NAME /ENDOR PART NO	
P.U./LOADING-50C-A/B	574-3-66-27	FLIGHT	1840 660407	368	NO	50/C	890420
<p>FAILURE MODE-PREMIATURE OPERATION. THE PU SYSTEM WAS UNABLE TO CORRECT FOR A LOX RICH ERROR ALTHOUGH SYSTEM RESPONSE WAS PROPER. SECO OCCURRED 8 SECONDS EARLY AS THE RESULT OF FUEL DEPLETION WITH 1785 POUNDS OF LOX REMAINING.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-PREMIATURE SUSTAINER ENGINE CUTOFF ALTHOUGH MISSION REQUIREMENTS WERE MET.</p> <p>CORRECTIVE ACTION-OPEN-INVESTIGATION IS BEING PERFORMED TO DETERMINE IF PRIMARY CAUSE IS LEAKAGE OR FUEL RICH BURNING OF THE BOOSTER ENGINES.</p>							
P.U./LOADING-50C-A/B	60ABN264-022/P6A-LO-02-0AC3	COUNTDOWN	1330 640630	ETR -153			891412
<p>FAILURE MODE-OUT OF TOLERANCE. EXPECTED TEST VALUE. LOX TOPPING NOT COMPLETED BY PRESCRIBED TIME.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOX ABOARD.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. 110 SECOND HOLD AND A 145 SECOND RECYCLE.</p> <p>CORRECTIVE ACTION-HOLD TO COMPLETE LOX TOPPING.</p>							
P.U./LOADING-50C-A/B	60A/BK764-016/L3-401-00-351	FLIGHT	3310 640423	WTR NO	NO		892179
<p>FAILURE MODE-OUT OF SPECIFICATION. PROPELLANT RESIDUALS WERE LESS THAN ANTICIPATED. MAY HAVE BEEN DUE TO LEAKAGE PR ON THE THRUST CHAMBER TUBES.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-NONE.</p>							
P.U./LOADING-50C-A/B	60A83-1237/P6A-LO-01-0A02	COUNTDOWN	1240 631127	ETR -153	NO		891489
<p>FAILURE MODE-OUT OF TOLERANCE. ATLAS LOX TOPPING WAS NOT COMPLETED BY PRESCRIBED TIME. PROBLEM W/NOT IN A/B SYSTEM.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOX ABOARD.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. ONE MINUTE HOLD.</p> <p>CORRECTIVE ACTION-HOLD TO COMPLETE LOX TOPPING.</p>							
P.U./LOADING-50C-A/B	60A83-1237/P6A-LO-01-0AC2	COUNTDOWN	1240 631127	ETR -153	NO		
<p>FAILURE MODE-OUT OF SPECIFICATION-ATLAS LOX LEVEL WAS NOT WITHIN PRESCRIBED LIMITS.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOX ABOARD.</p>							

13 JUN 1966

GENERAL VEHICLES  
CONVAIR DIVISION

## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-COUNTDOWN DELAYED. 133 SECOND HOLD. CORRECTIVE ACTION-HOLD TO ADJUST LOS LEVEL.							001470
P.U./LOADING-GDC-A/B	WSE-49/A3-402-00-176	FLIGHT	1760 830131	WTR	NO NO		002280
FAILURE MODE-OUT OF SPECIFICATION. THEORETICAL FUEL DEPLETION WOULD OCCUR AFTER 11.95 SECONDS WITH AN EXCESS 2,537 LBS OF LOS. EXPECTED RESIDUALS WERE 250 LBS. THIS EXCESS WAS CAUSED BY A HIGHER THAN PLANNED FUEL RATE. PREDICTED PU CL FLOW RATE WAS 88.74 LB PER SEC, ACTUAL WAS 91.3 LB PER SECOND. SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.							003357
P.U./LOADING-GDC-A/B	AX63-0003-130D/FC-CO-01-0004-022	COMPOSITE-FACTORY	130D 821228	FACTORY			
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. SYSTEM EFFECT-OPERATION TOO HIGH. THE EDO VOLTAGE READOUT WAS PLUS 0.323, MAXIMUM ALLOWED IS PLUS 0.30. VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAYED OR RE-SCHEDULED. POST-COMPOSITE TESTING REQUIRED. CORRECTIVE ACTION-NONE. THIS CONDITION COULD NOT BE DUPLICATED. TWELVE (12) RECHECKS WERE MADE WITH EDO READOUTS BE TWEEN 0.3 AND 0.4 VOLTS.							003339
P.U./LOADING-GDC-A/B	A-90-20-071P P/U SYSTEM	FAR 27-43009-809	21E 610714	ETR	YES NO	GDC/C	
FAILURE MODE-CONTAMINATION-SUBJECT SET S/W 101-0038/438, WAS REMOVED FROM MISSILE 21E. POSSIBLY CAUSED BY HYDRAULIC FLUID CONTAMINATION. FAILURE COULD NOT BE CONFIRMED. CORRECTIVE ACTION-NO ACTION TAKEN.							001141
P.U./LOADING-GDC-A/B	FTA 5075/P3-401-00-14	FWF	14D 890780	ETR -40	NO NO		
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. LOS LEVEL WAS NOT AT THE CORRECT LEVEL BY THE PRESCRIBED TIME. SYSTEM EFFECT-OPERATION TOO HIGH. LOS LEVEL WAS ABOVE THE UPPER PLCU LIMIT VEHICLE EFFECT-COUNTDOWN DELAYED. MOMENTARY HOLD. EXACT LENGTH INDETERMINATE. CORRECTIVE ACTION-HOLD TO ALLOW LOS LEVEL TO DROP TO PROPER LEVEL.							

GENERAL DYNAMICS  
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SIZE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B	7C-7-820/P2-301-00-07 PROPELLANT VALVE	FLIGHT	7C 590318	ETR	YES NO	YES 60/C	000003
FAILURE MODE-ERRATIC OPERATION. APPARENT IMPROPER CONTROL OF PU VALVE DURING FLIGHT. DATA INSUFFICIENT TO ISOLATE PROBLEM AREA OR DETERMINE CAUSE.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. AFTER ENTERING CONTROL, PU VALVE COMMANDED TO OPEN LIMIT WHERE IT REMAINED FOR ENTIRE FLIGHT. HEAD PRESSURE DATA INDICATED VALVE SHOULD HAVE BEEN COMMANDED AWAY FROM OPEN LIMIT. CALCULATIONS INDICATED EXCESSIVE LOW RICH CONDITION AT SUSTAINER SHUTDOWN.							
VEHICLE EFFECT-NONE. MISSION FAILED AS RESULT OF PREMATURE BOOSTER SHUTDOWN.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B	98-20-003 ORIFICE-TUBE INSTALLATION-PROPELLA 7-43010 NT UTILIZATION	FAR	136 590302	ETR	YES NO	YES 60/C	000570
FAILURE MODE-OUT OF TOLERANCE-P.U. SYSTEM INDICATED EXCESS FUEL ON BOARD THE MISSILE WITH RESPECT TO THE OTHER PROPELLANT DETECTING BACK-UP MEASUREMENTS. ORIFICE FITTING P/N 7-76837-7 SIZE WAS NOT AS CALLED OUT ON THE BLUE PRINT.							
CORRECTIVE ACTION-GDC TOOK ACTION TO INSURE RE-IDENTIFICATION OF COMPONENTS TO BE USED.							
P.U./LOADING-GDC-A/B	FTA432/P4-201-00-13	PNP	138 501222	ETR	YES NO		000000
FAILURE MODE-OUT OF TOLERANCE. THE PU INDICATED 1.2 PERCENT MORE FUEL ABOARD THAN THE DESIRED LEVEL. SINCE THE PU IS USED AS THE PRIMARY LOW TANKING SYSTEM, THE ERROR WAS REFLECTED IN THE TOTAL LOW TANKED.							
SYSTEM EFFECT-OPERATION TOO HIGH. MORE FUEL WAS LOADED THAN DESIRED.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B	FTA432/P1-202-00-9	PNP	98 501024	ETR	YES NO		001609
FAILURE MODE-DRIFT. AFTER FUEL TANKING, THE PU EDO DRIFTED UPWARD 1.18 PERCENT DURING A 24 HOUR PERIOD.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							

GENERAL INVESTIGATIVE  
DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B	FTA4322/P1-202-00-9	PRF	9B 261024	ETR 1	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION. ABRUPT EDO LEVEL SHIFTS WERE NOTED AT ENGINE SHUTDOWN, AND SHORTLY THEREAFTER, THESE SHIFTS WERE APPARENTLY CAUSED BY PRESSURE VARIATIONS CAUSED BY SHIFTING FROM INTERNAL TO EXTERNAL PRESSURIZATION.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-GDC-A/B	FTA 4258/P4-202-00-9 PUMP	COUNTDOWN	8B 260911	ETR -420	NO NO	
<p>FAILURE MODE-OUT OF TOLERANCE. LOX TOPPING COULD NOT BE ACCOMPLISHED DUE TO PROBLEMS WITH PUMP LC QUOTE-PUMP LC WOULD NOT ESTABLISH FLOW WITHOUT HELIUM REYSERING.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. 3 MINUTES HOLD.</p> <p>CORRECTIVE ACTION-LOX TOPPING ACCOMPLISHED WITH PUMPS LA AND LB.</p>						
P.U./LOADING-GDC-A/B	ZB-7-079/11-203-C1-07	CAPTIVE	TB	ETR	YES	
<p>FAILURE MODE-FAIL DURING OPERATION. ALTHOUGH THE PU AND MS VALVE ASSUMED THE FUELBORSH CONTROL LIMITS IN RESPONSE TO A 2 PERCENT FUEL RICH ERROR SIGNAL, THE ERROR RATIO DEMODULATOR SIGNAL WENT FROM A 2 PERCENT FUEL RICH TO AN APPROXIMATE 23 PERCENT FUEL RICH INDICATION. VALVES REMAINED AT FUEL RICH CONTROL LIMITS.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-NONE. RUN TERMINATED DURING BOOSTER PHASE DUE TO ANOTHER DIFFICULTY.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-GDC-A/B MANOMETER	LV-9B-20-3033-F MANORZL	FAR 27-43018-31	830716	ETR	YES NO	
<p>FAILURE MODE-CONTAMINATION-PER PROCEDURE 27-90262 BOX 3B PARAGRAPH 5.2.6 TEST POINT 9 WAS FOUND OUT OF TOLERANCE. FAILURE WAS CAUSED BY MOISTURE IN BOTH MANOMETERS, AND MERCURY DROPS ON THE LOWER SEVEN INCHES OF THE LOX MANOMETER.</p> <p>CORRECTIVE ACTION-BY THE ETR SITE PERSONNEL HAVE BEEN INFORMED OF THE RESULT OF ANALYSIS AND HAD BEEN CAUTIONED ABOUT LEAVING PRESSURE CAPPED OFF IN THE MANOMETER.</p>						

GENERAL DYNAMICS  
CONVAIR DIVISION

13 JUN 1968

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GOC-A/B MANOMETER	LV-98-20-3048-F CHECK VALVE	FAR 27-04308-1	184-D 650329	FACTORY	YES	CIRCLE SEAL NO 249A-4TT	093963
FAILURE MODE-STRUCTURAL-CHECK VALVE WAS OBSERVED LEAKING BETWEEN 750 AND 500 PSIG WHILE PERFORMING EQ 333.23.1. FA ILURE IS ATTRIBUTED TO NICKS AND DENTS IN THE POPPET SEAT SINCE INTERNAL LEAKAGE CONTINUED TO OCCUR WHEN A NEW POPPE T SEAT O-RING WAS INSTALL. THE NICKS AND DENT IN THE POPPET SEAT WERE APPARENTLY CAUSED BY THE VENDOR DURING REWORK.							
CORRECTIVE ACTION-IT APPEARS THIS CHECK VALVE WAS NOT REMOVED BY THE VENDOR, BUT HE IS AWARE OF THE PROBLEM. RECOR DS DO NOT INDICATE THE CHECK VALVE WAS REMOVED BY GO/C. NO FURTHER CORRECTIVE ACTION CAN BE TAKEN CONCERNING THIS P ROBLEM.							
P.U./LOADING-GOC-A/B MANOMETER	LV-98-20-3044-F FITTING DISCONNECT	FAR 27-04288-41	198D 650216	12	YES	WIGGINS NO 6035C87D4	093962
FAILURE MODE-STRUCTURAL-THIS QUICK DISCONNECT REPORTEDLY FAILED DURING P/U INSTALLATION ON 198D, APPROX. 2 OUNCES O F MERCURY SPILLED OUT OF THE DISCONNECT. POPPET LOOSED OPEN BY TWO HUNPS IN THE NIPPLE INNER BORE. HUNPS WERE CAUSED BY A WRENCH SLIPPING OFF THE FLATS AND SQUEEZING THE NIPPLE OUT OF R XND.							
CORRECTIVE ACTION-A SPECIAL TOOL WAS MANUFACTURED AND MADE AVAILABLE TO CLEAN-ROOM PERSONNEL. WRITTEN NOTICE OF ITS EXISTENCE WAS FOLLOWED UP BY A DISCUSSION AND INSTRUCTION IN ITS USE.							
P.U./LOADING-GOC-A/B MANOMETER	A3-400-01-247 B MUT	COMPOSITE-FRD/DPL	247D 640618	A3	YES	NO	093977
FAILURE MODE-LEAKAGE EXTERNAL. WAS NOTED AT THE B MUT AT THE CONNECTION BETWEEN SUBBLER VALVE OUTPUT LINE AND THE P UEL DIFFERENTIAL PRESSURE TRANSDUCER SENSE LINE.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED.							
CORRECTIVE ACTION-B MUT WAS TIGHTENED.							
P.U./LOADING-GOC-A/B MANOMETER	LV-98-20-3019-F MANOMETER-P/U SYSTEM	FAR 27-43018-21	640610	WTR	YES	GO/C NO	
FAILURE MODE-ELECTRICAL SHORT-P/U SET REPORTEDLY FAILED PER PROCEDURE 27-90288-BOOK 38. AT PARAGRAPH B.3.7, READING 5 IN EXCESS OF PLUS 10 VOLTS DC WERE OBTAINED. FAILURE WAS CAUSED BY A HIGH RESISTANCE SHORT IN THE CAP ASSEMBLY OF THE LOX MANOMETER. THE HIGH RESISTANCE SHORT IN THE CAP ASSEMBLY RESULTED FROM AN INCORRECTLY POTTED CONTACT SOCKET.							



GENERAL DYNAMICS  
CONVAIR DIVISION

15 JUN 1968

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYST. M-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-ENGINEERING IS IN THE PROCESS OF CLARIFYING DWS 7-43466 AND 27-43367 CAP ASSEMBLIES TO INDICATE M AND CALLOUT OF THE PERFORMED PORTING MATERIAL, PRO-SEAL 777.						895486
P.U./LOADING-60C-A/B MANOMETER	LV-98-20-3027-F O-RING DISCONNECT	FAR 27-04286-41	640729	FACTORY	YES E.B. WIGGINS NO 8059CB704		896003
	FAILURE MODE-LEAK-FOURTEEN DISCONNECTS REPORTEDLY FAILED WHEN THEY LEAKED DURING PROCEDURE 55-330-55.2 LEAKAGE WAS CAUSED BY O-RING COMPRESSION SET.						
	CORRECTIVE ACTION-IT WAS AGREED TO REPLACE ALL O-RINGS IN THESE UNITS, REGARDLESS OF THE PREVIOUS ASSEMBLY DATE. WH ENEVER THESE UNITS ARE CLEANED. CAREFUL ASSEMBLY PROCEDURES WERE STRESSED. REQUEST VENDOR TO REPLACE-14 O-RING WITH A -13 O-RING.						
P.U./LOADING-60C-A/B MANOMETER	LV-98-20-3022-F O-RING-PRESSURE PORT FITTING-	FAR 27-43018-21	640723	ETR	YES 50/C NO		896009
	FAILURE MODE-LEAK-INTERNAL. P/U SET REPORTEDLY FAILED WHEN LOX MANOMETER VENT PORT FITTING LEAKED. LEAKAGE WAS CAUS ED BY A COMPRESSION SET O-RING. THE FITTING WAS BEYOND THE MAXIMUM ALLOWABLE AGE ESTABLISHED BY THE RUBBER ASSEMBLY AGE-CONTROL LOG.						
	CORRECTIVE ACTION-IT WAS AGREED TO REPLACE ALL O-RINGS IN THESE UNITS REGARDLESS OF THE PREVIOUS ASSEMBLY DATE, WH N THESE UNITS ARE CLEANED. VENDOR WAS REQUESTED TO REPLACE-14 O-RING WITH -13 O-RING.						
P.U./LOADING-60C-A/B MANOMETER	LV-98-20-3022-F VENT PORT FITTING-	FAR 27-43018-21	640723	ETR	YES 50/C NO		895484
	FAILURE MODE-LEAK-P/U SET REPORTEDLY FAILED WHEN THE LOX MANOMETER VENT PORT FITTING LEAKED DURING PROCEDURE 27-902 42 BOOK 3-B. LEAKAGE AT THE VENT PORT FITTINGS WAS NOT CONFIRMED. NO CAUSE FOR LEAKAGE WAS FOUND. HOWEVER THE PRESSU RE PORT FITTING WAS LEAKY.						
	CORRECTIVE ACTION-NONE.						
P.U./LOADING-60C-A/B MANOMETER	LV-98-20-3021 F FLEXHOSE	FAR 7-04367-1	640723	ETR	NO AMERICAN BRASS YES 1-103-4.090		
	FAILURE MODE-FLEXHOSE REPORTEDLY FAILED AS LEAKING AT ONE END DURING A CHECK OF THE P/U SET. REPORTED FAILURE WAS N OT CONFIRMED. REPLACEMENT PART DID NOT RESOLVE THE LEAK PROBLEM. P/U SET AND REPLACEMENT HOSE WENT TESTED AND INVEST IGATED. FAR LV-98-20-3022 WILL RELATE THE FINDINGS.						



GENERAL DYNAMICS  
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SIB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B MANOMETER	LV-98-20-282F MANOMETER	FAR 27-43010-21	640113	ETR	YES NO		895093
FAILURE MODE-CONTAMINATION. UNIT WAS REJECTED FOR CAPACITANCE OUT OF TOLERANCE. FAILURE WAS CONFIRMED AS CAUSED BY CONTAMINATED MERCURY AND EXCESSIVE DROSS ACCUMULATION ON MANOMETER MANDREL.							
CORRECTIVE ACTION-FACTORY PROCEDURES ARE BEING CHANGED TO INCLUDE A HELIUM LEAK CHECK OF THE MANOMETERS PRIOR TO IM SECTION OF MERCURY.							
P.U./LOADING-GDC-A/B MANOMETER	LV-A9-20-284F MANOMETER	FAR 27-43010-23	296-D 631217	FACTORY	YES NO		895093
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED FOR OUT OF TOLERANCE CONDITIONS AT TEST POINTS. FAILURE WAS CONFIRMED AS CAUSED BY MERCURY ENTRAPPED IN THE STATIC VENT OF THE MANOMETER. FAILURE RESULTED FROM OVERPRESSURIZING THE MANOMETER DURING CHECKOUT.							
CORRECTIVE ACTION-MANOMETER TEST STANDS WILL BE VARIFIED TO B/P AND STANDS CHECKED BY INSPECTION PERSONNEL PRIOR TO SYSTEMS TESTS.							
P.U./LOADING-GDC-A/B MANOMETER	LV-98-20-291-F TRANSDUCER FUNCTIONAL	FAR 7-43012-823	199D 631208	ETR	YES NO		895094
FAILURE MODE-LEAK. UNIT WAS REJECTED WHEN IT LEAKED AT THE STATIC VENT LINE FITTING. FAILURE WAS NOT CONFIRMED THOUGH FITTING SHOWED EVIDENCE OF DAMAGE.							
CORRECTIVE ACTION-PROCEDURES WERE REVISED TO IMPROVE LEAK TESTING DURING MANUFACTURING.							
P.U./LOADING-GDC-A/B MANOMETER	LV-99-20-282-F MANOMETER	FAR 27-43010-21	6311C9	ETR	YES NO		895094
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR OUT OF TOLERANCE CAPACITANCE. FAILURE WAS CONFIRMED AS CAUSED BY CONTAMINATED MERCURY AND EXCESSIVE DROSS ACCUMULATED ON MANOMETER MANDREL.							
CORRECTIVE ACTION-NONE. PRESENT PURGING PROCEDURES ARE CONSIDERED ADEQUATE.							

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CONVAIR DIVISION

## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B MANOMETER	LV-98-20-260F MANOMETER FITTING OR FLANGE	FAR 27-04288	630911	ETR	YES	WIGGINS NO	698636
FAILURE MODE-INTERNAL LEAK. UNITS WERE REJECTED FOR INTERNAL LEAKAGE AT THE THREADED AREAS. TWO DISCONNECTS FAILED. FAILURES WERE CONFIRMED BUT COULD NOT BE ISOLATED BECAUSE OF INADVERTANT DESTRUCTION OF THE SEALING O-RING.							
CORRECTIVE ACTION-NONE. CAUSE OF FAILURE WAS NOT ISOLATED BECAUSE OF INADVERTANT LOSS OF O-RING SEALS AND ABSENCE OF THE NUTTING COMPLINGS.							
P.U./LOADING-GDC-A/B MANOMETER	SP-98-20-266-F MANOMETER	FAR 7-43012-823	630909	ETR	YES	60/C NO	698636
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR LOW DIELECTRIC RESISTANCE. FAILURE WAS NOT CONFIRMED.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B MANOMETER	SP-98-20-239-F FLOW-CONTROL VALVE	FAR 27-04314-3	2120 630913	WTR	YES	LEONARD NO 128630-12	698636
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR INADEQUATE FLOW RATE. FAILURE WAS NOT CONFIRMED THOUGH PARTICLES AND A METAL BURR WERE FOUND ON THE FIXED ORIFICE DURING ANALYSIS.							
CORRECTIVE ACTION-VENDOR WAS REQUESTED TO REVIEW HIS CLEANING AND INSPECTION PROCEDURES.							
P.U./LOADING-GDC-A/B MANOMETER	CT-98-20-020 FLEXLINE HOSE	FAR 55-43003-7	1280 630715	ETR	YES	60/C NO	698636
FAILURE MODE-LEAK-EXTERNAL-P/U SET REPORTEDLY FAILED WHEN LEAKAGE REPORTEDLY OCCURRED AT BOTH ENDS OF THE STATIC FLUXLINE ON THE MANOMETER.							
CORRECTIVE ACTION-NONE. FAILURE NOT CONFIRMED.							
P.U./LOADING-GDC-A/B MANOMETER	SP-98-20-253F MANOMETER	FAR 27-43016-18	2010 630738	WTR	YES	60/C NO	698636
FAILURE MODE-LEAK (EXTERNAL) SET WAS REJECTED WHEN MERCURY WAS OBSERVED LEAKING FROM HEAD-PRESSURE DISCONNECT. FAILURE WAS CONFIRMED BUT CAUSE WAS NOT DETERMINED.							

GENERAL L. MICB  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	811C TIME L/P	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE. CAUSE OF FAILURE WAS NOT DETERMINED.						
P.U./LOADING-60C-A/B MANOMETER	SP-90-20-235F FLOW-CONTROL VALVE	FAR 27-43014-1	2010 830701	WTR	YES LEONARD NO 126850-7	
FAILURE MODE-CONTAMINATION. UNIT WAS REJECTED FOR INADEQUATE FLOW RATE. FAILURE WAS CONFIRMED AS CAUSED BY CONTAMINATION. IDENTICAL FAILURE REPORTED ON FAR SP-90-20-236-.						
CORRECTIVE ACTION-VENDOR WAS INSTRUCTED TO REVIEW HIS CLEANING PROCEDURES FOR ADEQUACY. 60/C ENGINEERING IS CONSIDERING A CHANGE TO A FIXED ORIFICE VALVE.						
P.U./LOADING-60C-A/B MANOMETER	HC-99-20-237-F MANOREL	FAR 27-43018-25	144D 830610	FACTORY	YES 60/C NO	
FAILURE MODE-CONTAMINATION. FAILURE WAS CONFIRMED AS CAUSED BY CHANGE IN MANOMETER CAPACITANCE. CHANGE IN CAPACITANCE WAS ATTRIBUTED TO A HEAVY COATING OF DROSS ON MANOREL.						
CORRECTIVE ACTION-NONE. PRESENT PROCEDURES ARE CONSIDERED ADEQUATE.						
P.U./LOADING-60C-A/B MANOMETER	SP-99-20-249F FLUID TANK	FAR 7-43025-3	224-D 830607	FACTORY	YES 60/C NO	
FAILURE MODE-LEAKED-EXTERNAL. UNIT WAS REJECTED WHEN IT LEAKED AT A WELDED FITTING. FAILURE WAS CONFIRMED AS CAUSED BY NOT TEAR OF MATERIAL DURING COOL DOWN OF THE WELDMENT.						
CORRECTIVE ACTION-WELDING PROCEDURES WERE REVIEWED FOR ADEQUACY. INSPECTION WILL EXAMINE ALL UNITS FOR SIMILAR FAILURES.						
P.U./LOADING-60C-A/B MANOMETER	SP-90-20-248-F MANOREL	FAR 27-43018-19	139D 830829	WTR	NO 60/C NO	
FAILURE MODE-CONTAMINATION. PROBLEM TRACED TO MOISTURE CONTAMINATION OF THE MANORELS.						
CORRECTIVE ACTION-WTR NOTIFIED TO PURGE AND RETEST MATCHED SETS NOT WITHIN SPEC.						

GENERAL DYNAMICS  
CONVAIR DIVISION

18 JUN 1968

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	U/F DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-60C-A/B MANOMETER	SP-90-20-243F FLOW CONTROL VALVE	FAR 27-04314-1	201D 830311	WTR	YES NO	SARGENT 1520CA-OE	895087
FAILURE MODE-CONTAMINATION. UNIT WAS REJECTED FOR EXCESSIVE FLOW. FAILURE WAS CONFIRMED AS CAUSED BY PARTIAL CONTAMINATION AND EXCESSIVE LUBRICANT. IDENTICAL FAILURE REPORTED ON FAR 82-90-20-238-F.							
CORRECTIVE ACTION-RECOMMENDED THAT FIXED ORIFICE TYPE VALVE BE USED IN PLACE OF THE ADJUSTABLE TYPE. ALSO RECOMMENDED THAT THE LEONARD VALVE BE USED UNTIL THE SARGENT VALVE IS QUALIFICATION TESTED.							
P.U./LOADING-60C-A/B MANOMETER	SP-90-20-246-F FLOW CONTROL-VALVE	FAR 27-04314-1	201C 830311	WTR	YES NO	SARGENT 1520CA-OF	894084
FAILURE MODE-CONTAMINATION. EXCESSIVE FLOW RATE CAUSED BY EXCESSIVE GREASE AND MINUTE CONTAMINATION. FLOW RATE THREE TIMES NORMAL. 11 OUT OF 12 VALVES TESTED FAILED.							
CORRECTIVE ACTION-PART CHANGE TO FIXED ORIFICE PN 27-04314-3 ON AN AS FAIL BASIS. ALSO RECOMMENDED USE OF VALVE VENDED BY LEONARD.							
P.U./LOADING-60C-A/B MANOMETER	SP-90-20-247-F FLOW CONTROL-VALVE	FAR 27-04314-1	139D 830311	WTR	YES NO	LEONARD 128850-Y	894090
FAILURE MODE-OUT OF TOLERANCE. FAILURE NOT CONFIRMED.							
CORRECTIVE ACTION-VALVE WAS MODIFIED TO A DAMN THREE WITH A FIXED ORIFICE.							
P.U./LOADING-60C-A/B MANOMETER	90-20-232F VALVE	FAR 27-04314-1	119D 830427	WTR	YES NO	SARGENT 1520-CA-E	894394
FAILURE MODE-CONTAMINATION. REJECTED FOR INCORRECT FLOW RATE. 9/N 0090280 HAD LOW FLOW RATE. 9/N 0090287 HAD A HIGH FLOW RATE. CAUSE WAS CONTAMINATION WITH LUBRICATING GREASE AND SENSITIVITY OF NEEDLE ADJUSTMENT.							
CORRECTIVE ACTION-UNKNOWN.							

GENERAL JANICS  
CONVAIR DIVISION

19 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTILIZING SYSTEM-AIRBORNE

SYSTEM	REPORT NUMBER	VEHICLE	DATE	TIME	SITE	PRI	OTH	VENDOR NAME
SLB-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE	TIME	SITE	PRI	OTH	VENDOR NAME
P.U./LOADING-GDC-A/B MANOMETER	90-20-240F BARGE TANK B-NUT	FAR 27-43029-95	1190	WTR	YES	NO		996039
FAILURE MODE-EXTERNAL LEAK AT B-NUT CONNECTION OF FUEL HEAD PRESSURE 1/4 INCH TUBE TO CAN CONNECTION. CAUSE IS ATTRIBUTED TO STRESS RELAXATION OF THE B-NUTS. PART WAS NOT ANALYZED-UNIT FLEW WITH VEHICLE.								
CORRECTIVE ACTION-APPROPRIATE PERSONNEL WERE INFORMED PER RAR SP-90-06-3646.								
P.U./LOADING-GDC-A/B MANOMETER	90-20-240F BARGE TANK B-NUT	FAR 7-43025-5	1190	WTR	YES	NO		995199
FAILURE MODE-LEAK-EXTERNAL. DURING SYSTEM CHECKS PRIOR TO COUNTDOWN, LEAKAGE WAS FOUND AT THE FITTING AT THE BOTTOM END OF THE BARGE TANK. FAILURE ANALYSIS WAS NOT PERFORMED.								
CORRECTIVE ACTION-B-NUT WAS TIGHTENED.								
P.U./LOADING-GDC-A/B MANOMETER	90-20-240F BARGE TANK B-NUT	FAR 7-43025-5	1190	WTR	YES	NO		995199
FAILURE MODE-PNEUMATIC OPERATION. HUMAN ERROR RESULTED IN BLEEDING DOWN THE PNEUMATIC PRESSURE TO THE PU SYSTEM MANOMETERS BEFORE COMPLETION OF THE TEST.								
SYSTEM EFFECT-NONE.								
VEHICLE EFFECT-COMPOSITE DELAYED. PNEUMATIC OPERATION OF THE PU SYSTEM EDO SIGNAL WAS OBSERVED AS A RESULT OF PREMATURE LOSS OF PRESSURE TO THE MANOMETERS. POST COMPOSITE TESTING REQUIRED.								
CORRECTIVE ACTION-NONE.								
P.U./LOADING-GDC-A/B MANOMETER	90-20-240F BARGE TANK B-NUT	FAR 27-43025-5	1190	WTR	YES	NO		995199
FAILURE MODE-CONTAMINATION-FAILURE TRACED TO CONTAMINATED MANOMETERS BY MOISTURE.								
CORRECTIVE ACTION-NONE. GDC PERSONNEL SHOULD BE FAMILIARIZED WITH NEW CALIBRATION AND PURGING PROCEDURES TO ELIMINATE REPEATED FAILURES IN THIS MODE.								

19 JUN 1966

GENERAL AMICS  
CONVAIR DIVISION

## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE	PRI QTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-60C-A/B MANOMETER	99-20-211P MANOMETER	FAR 27-43010-13	1300 630301	FACTORY	YES NO	60C	996038
FAILURE MODE-OUT OF TOLERANCE. OUT OF TOLERANCE READINGS AT TEST POINTS 24, 26, 27 DURING PROCEDURE 27-92022-1. FAILURE WAS CONFIRMED. CAUSE WAS HEAVY CONTAMINATION BY MOISTURE OF THE FUEL MANOMETER. THIS CAUSED A CHANGING CAPACITANCE OF THE MANOMETER.							
CORRECTIVE ACTION-TCP 8122, SALES ORDER 11-1-964 OF 29 MARCH, 1963 AUTHORIZED DESIGN AND PROCEDURE CHANGES FOR PURGING CANISTERS WITH CONTROLLED DRY GAS.							
P.U./LOADING-60C-A/B MANOMETER	SP-99-20-208-P MANOMETERS	FAR 33-43003-7	1260 630210	FACTORY	YES NO	60/C	994248
FAILURE MODE-CONTAMINATION-FAILURE TRACED TO CONTAMINATED MANOMETERS BY MOISTURE.							
CORRECTIVE ACTION-TCP 8122 WAS APPROVED TO PROVIDE PROCEDURES AND HARDWARE TO PURGE PU SYSTEM LINES.							
P.U./LOADING-60C-A/B MANOMETER	SP-99-20-203-P MANOMETER	FAR 27-43010-13	2010 630204	FACTORY	YES NO	60/C	994234
FAILURE MODE-CONTAMINATION-CAUSE TRACED TO EXCESSIVE MOISTURE WHICH HAD CONTAMINATED THE MANOMETER MANOMETERS.							
CORRECTIVE ACTION-TCP 8122 WAS SUBMITTED 630210 TO PROVIDE PROCEDURES AND HARDWARE TO PURGE MOISTURE FROM PU SYSTEM LINES. AF APPROVED PER S.O. 11-1-964.							
P.U./LOADING-60C-A/B MANOMETER	SP-99-20-209P TUBE ASSEMBLY	FAR 27-43020-101	131-0 681206	WTR	NO NO	60/C	993830
FAILURE MODE-LEAK EXTERNAL. UNIT WAS REJECTED FOR LEAKAGE.							
CORRECTIVE ACTION-NONE. FAILURE COULD NOT BE CONFIRMED.							
P.U./LOADING-60C-A/B MANOMETER	SP-99-20-221-P VALVE O RING	FAR 27-04314-1	1900 681206	FACTORY	YES NO	SARGENT	
FAILURE MODE-LEAK-INTERNAL. FAILURE TRACED TO THE DYNAMIC O-RING HAVING TAKEN A COMPRESSION SET AFTER 2 YEARS INSTALLED AND SLIGHTLY UNDERSIZED CROSS-SECTIONAL AREA.							



GENERAL - AMICS  
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	SIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
							004240
	CORRECTIVE ACTION-VENDOR INFORMED OF A MARGINAL SIZED O-RING BEING INSTALLED.						
P.U./LOADING-GDC-A/B MANOMETER	SP-99-20-178F MANOMETER	FAR 27-43016-19	190C 021109	FACTORY	YES 60/C NO		005716
	FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED AT FIVE TEST POINTS OUT OF TOLERANCE IN FACTORY SYSTEM CHECKOUT OF MISSILE 1900. FAILURE WAS CAUSED BY A CHANGE IN THE MOISTURE CONTENT OF ONE OR BOTH OF THE MANOMETERS.						
	CORRECTIVE ACTION-GO/C INITIATED TCP 8122 AND APPROVED BY AIR FORCE TO PROVIDE PROCEDURES AND HARDWARE TO PURGE MOISTURE FROM ALL PNEUMATIC LINES CONNECTING TO MANOMETER.						
P.U./LOADING-GDC-A/B MANOMETER	SP-99-20-181F MANOMETER	FAR 27-43016-13	215D 021017	ETR	YES 60/C NO		005710
	FAILURE MODE-OUT OF TOLERANCE. AS A RESULT OF REPORTED FAILURE, THE MATCHED SET WAS FOUND TO BE OUT OF TOLERANCE DUE TO A CHANGE IN THE MOISTURE CONTENT OF THE TWO MANOMETERS.						
	CORRECTIVE ACTION-GO/C INITIATED TCP 8122 AND APPROVED BY AIR FORCE TO PROVIDE PROCEDURES AND HARDWARE TO PURGE MOISTURE FROM ALL PNEUMATIC LINES CONNECTING TO MANOMETERS.						
P.U./LOADING-GDC-A/B MANOMETER	MG-99-20-186F MANOMETER	FAR 27-43016-13	021012	FACTORY	YES 60/C NO		005701
	FAILURE MODE-OUT OF TOLERANCE-P/U SET REPORTEDLY FAILED DURING TEST RUN WHEN TEST POINTS WERE OUT OF TOLERANCE NEGATIVE. FAILURE WAS DUE TO A SHIFT IN DIELECTRIC CHARACTERISTICS OF MANOMETER MANOMETERS. PROBABLE CAUSE OF THIS FAILURE WAS IMPROPER BAKING OR AGEING OF THE MANOMETER MANOMETERS.						
	CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.						
P.U./LOADING-GDC-A/B MANOMETER	A-99-20-184F MANOMETER	FAR 27-43016-19	020905	ETR	NO 60/C NO		
	FAILURE MODE-DRIFT-RETURNED FROM ETR TO RESTORE TO INITIAL SELL-OFF CHARACTERISTICS, BUT ERRONEOUSLY ROUTED FOR FAILURE ANALYSIS. OPERATIONAL CHARACTERISTICS OF SET HAD DRIFTED DUE TO MOISTURE, CONTAMINATION, AND CHANGES IN THE CHARACTERISTICS OF THE TWO MANOMETERS. THE SET WAS WITHIN SPECIFICATION LIMITS AND WOULD HAVE FUNCTIONED NORMALLY UNDER LAUNCH AND FLIGHT CONDITIONS.						

GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-SINCE THIS SET WAS RETURNED FOR DEPOT REPAIR, AND NO FAILURE WAS INVOLVED, NO CORRECTIVE ACTION T AGEN.						
P.U./LOADING-60C-A/B MANOMETER	SP-49-20-133F MANOREL	FAR 27-43016-19	148D 620904	FACTORY	YES 60/C NO	
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED FOR OUT OF TOLERANCE FOR ERROR DETECTOR OUTPUT VERNES PRES SURE. FAILURE WAS CAUSED BY AN ACCUMULATION OF MOISTURE AND MERCURY DROPS ON THE MANORELS OF BOTH MANOMETERS.						
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSING HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTRO POLISH OF INSIDE AND OUTSIDE SURFACES PER 60/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETER WAS ACCOMPLISHED BY E.O. BH-1 TO DWG. NO. 27-43016.						
P.U./LOADING-60C-A/B MANOMETER	SP-49-20-133F DEMODULATOR	FAR 27-43016-19	148D 620827	FACTORY	YES 60/C NO	
FAILURE MODE-OUT OF TOLERANCE. P/U SET OUT OF TOLERANCE FOR ERROR DETECTOR OUTPUT VERSUS PRESSURE. FAILURE WAS CAUS ED BY CONTAMINATION OF THE LOW MANOREL BY MERCURY DROPS.						
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSINGS HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER 60/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETERS WAS ACCOMPLISHED BY E.O . BH-1 TO DWG NO. 27-43016.						
P.U./LOADING-60C-A/B MANOMETER	MG-98-20-143F MANOREL	FAR 27-43016-13	620816	ETR	YES 60/C NO	
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSING HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER 60/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETER WAS ACCOMPLISHED BY E.O. BH-1 TO DWG NO. 27-43016.						
P.U./LOADING-60C-A/B MANOMETER	MG-98-20-143F MANOREL	FAR 27-43016-13	620813	ETR	YES 60/C NO	
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED TEST POINTS OUT OF TOLERANCE. CONTAMINATED MERCURY DROPS, PREDOMINANTLY IN THE FUEL MANOMETER, PRODUCED A POSITIVE SHIFT IN ERROR DETECTOR RESPONSE.						

GENERAL MICS  
CONVAIR B-181C

# DIFFICULTIES REVIEW-PROPELLANT UTILITY/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSINGS HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER 60/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETERS WAS ACCOMPLISHED BY E.O. 98-1 TO DMS NO. 27-43018.						
P.U./LOADING-60C-A/B MANOMETER	SP-98-20-162F MANDREL	FAR 27-43018-13	179-D 620809	ETR	YES NO	YES 60/C
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED FOR OUT OF TOLERANCE FOR ERROR DETECTOR OUTPUT VERSES PRESURE. FAILURE WAS DUE TO AN ACCUMULATION OF MOISTURE AND MERCURY DROPS ON THE MANDRELS OF BOTH MANOMETERS. OTHER CAUSE REPORTED IN FAR SP-98-20-163F.						
CORRECTIVE ACTION-60/C INITIATED TCP 912Z AND APPROVED BY AIR FORCE TO PROVIDE PROCEDURES AND HARDWARE TO PURGE HOUSTAKE FROM ALL PNEUMATIC LINES CONNECTING TO MANOMETER.						
P.U./LOADING-60C-A/B MANOMETER	AA62-0060/P2-48N-02-179 PU FUEL MANOMETERS	COMPOSITE-FRD/DPL 27-43018-13	179D 620809	ETR	YES NO	YES 60/C
FAILURE MODE-OUT OF TOLERANCE. THE EDO VOLTAGE WAS INDICATING ABOUT 1 VOLT BELOW REDLINE WITH PROPELLANTS TANKED.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-MATCHED SET 395 REPLACED WATCHED SET 391. INVESTIGATION REVEALED MOISTURE CONTAMINATION OF THE PU EL MANOMETERS AND THE SENSING LINES WERE PURGED AND THE WIGGERS DISCONNECTS CLEANED PRIOR TO THE NEXT TANKING. (FAR 98-20-162).						
P.U./LOADING-60C-A/B MANOMETER	SP-98-20-161F MANDREL	FAR 27-43018-19	620730	WTR	NO NO	NO 60/C
FAILURE MODE-OUT OF TOLERANCE-REPORTED FAILURE OF THE P/U SET WAS TEST POINT 5 AND 6 PER PROCEDURES 27-94332-8K-1 WERE OUT OF TOLERANCE. REPORTED FAILURE WAS NOT CONFIRMED. MOST PROBABLE CAUSE OF THE REPORTED FAILURE WAS A DISCREPANCY IN THE EQUIPMENT USED DURING TESTING.						
CORRECTIVE ACTION-NONE ACTION TAKEN.						

18 JUN 1966

GENERAL AMICS  
CONVAIR DIVISION

## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-60C-A/B MANOMETER	A-98-20-138F MANOREL	FAR 27-43018-13	620729	WTR	YES NO	60/C	989723
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED, DURING A RUN OF PROCEDURE 27-98540, TEST POINT 9 WAS OUT OF TOLERANCE. FAILURE WAS DUE TO AN ACCUMULATION OF MOISTURE AND MERCURY DROPS ON MANORELS IN BOTH MANOMETERS.							
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSING HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER 60/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETER WAS ACCOMPLISHED BY E.O. 8 BH-1 TO DMS NO. 27-43018.							
P.U./LOADING-60C-A/B MANOMETER	HC-AB-20-184F MANOREL-P/U SYSTEM	FAR 27-43018-13	1130 620712	FACTORY	YES NO	60/C	986173
FAILURE MODE-OUT OF TOLERANCE-P/U SET REPORTEDLY FAILED FOR AN OUT OF TOLERANCE ERROR DETECTOR RESPONSE DURING A COMPOSITE TEST. FAILURE IS ATTRIBUTED TO NORMAL AGING CHARACTERISTICS OF THE MUGELON-3 DIELECTRIC COATINGS OF MANOREL 3. FOLLOWING THE DIELECTRIC BANDING OPERATIONS REQUIRED FOR MATCHING OF THE MANOMETERS.							
CORRECTIVE ACTION-THE ONLY FUNCTION REQUIRED TO THIS MATCHED SET WAS RECALIBRATION OF THE ERROR DETECTOR TO ACCOUNT FOR SLIGHT DIELECTRIC AGING CHARACTERISTICS, NO FURTHER CORRECTIVE ACTION WILL BE TAKEN.							
P.U./LOADING-60C-A/B MANOMETER	SP-98-20-171F MANOREL	FAR 27-43018-13	620706	ETR	YES NO	60/C	989703
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED WHEN TEST POINT 28 WAS OUT OF TOLERANCE. IT WAS, ALSO, REPORTED THE DIELECTRIC IN THE FUEL MANOMETER WAS SHORTED. REPORTED FAILURES WERE NOT CONFIRMED. NO EXTERNAL CAUSES FOR REJECTION OF THIS SATISFACTORY P/U SET WERE FOUND.							
CORRECTIVE ACTION-NO ACTION TAKEN.							
P.U./LOADING-60C-A/B MANOMETER	SP-98-20-170F MANOREL	FAR 27-43018-13	1430 620703	ETR	YES NO	60/C	
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED DURING CHECKOUT WHEN ERROR DETECTOR OUTPUT VOLTAGE WAS OUT OF TOLERANCE POSITIVE. FAILURE WAS DUE TO ACCUMULATIVE ERRORS CONSISTING OF SLIGHT DEPOSITS OF MERCURY DROPS AND THE POSSIBILITY OF A THICK DIELECTRIC AT THE TOP TWO INCHES OF THE FUEL MANOREL.							
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSING HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACE PER 60/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETER WAS ACCOMPLISHED BY E.O. 8							

GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
N-1 TO DWG 27-43016.						
P.U./LOADING-60C-A/B MANOMETER	SP-19-20-188F MANDREL	FAR 27-43016-19	136D 620623	FACTORY	YES NO	60/174
FAILURE MODE-OUT OF TOLERANCE. P/U SET REPORTEDLY FAILED IN THE FACTORY CHECKOUT AREA WHEN TEST POINTS READ ABOUT 13 VOLTS NEGATIVE OUT OF TOLERANCE. FAILURE RESULTED FROM THE LOOSE PIECE OF MANDREL NOT GOLD PLATE INTERMITTENTLY SHORTING THE MANDREL TO ITS CASE.						
CORRECTIVE ACTION-RECORD CHANGE WAS MADE TO CREATE A NOTE CALLING OUT GOLD FLASHING FOR -9 PLUG OF DWG 7-43438. NOTES OF THIS DWG WERE CLARIFIED TO SHOW WHERE SURFACE PREPARATION, SILVER PLATING, AND GOLD FLASHING ARE REQUIRED.						
P.U./LOADING-60C-A/B MANOMETER	SP-9D-20-172-C MANOMETER	FAR 27-43016-19	115D 620612	WTR	YES NO	60/174
FAILURE MODE-OUT OF TOLERANCE- P/U SET REPORTEDLY FAILED WHEN TEST POINTS 11, 12, AND 14 OF PROCEDURE 27-94532 WERE OUT OF TOLERANCE. THE SET WAS REPAIRED AND RETURNED TO THE FIELD.						
CORRECTIVE ACTION-NO ACTION TAKEN.						
P.U./LOADING-60C-A/B MANOMETER	A-9D-20-122F MANDREL-P/U SYSTEM	FAR 27-43009-807	64C 620605	WTR	YES NO	60/174
FAILURE MODE-CONTAMINATION-P/U SET REPORTEDLY FAILED DURING A MAPCHE CHECKOUT. AN INCORRECT MANOMETER CAPACITANCE RATIO EXISTED DUE TO MERCURY METALLIC CONTAMINATION DROPS DEPOSITS ON THE MANDRELS.						
CORRECTIVE ACTION-REL-P LUBRICANT TO BE USED SPARINGLY AND ONLY IN AREAS DIVORCED FROM MERCURY, AND USE THE HIGH PURITY MERCURY PURCHASED UNDER SPEC. D-71020.						
P.U./LOADING-60C-A/B MANOMETER	SP-9D-20-117F VALVE-FLOW CONTROL	FAR 27-04314-1	110D 620326	WTR	YES NO	60/174
FAILURE MODE-OUT OF TOLERANCE-VALVE REPORTEDLY FAILED DUE TO A HIGH FLOW RATE. FAILURE IS ATTRIBUTED TO THE LOW NEEDLE TORQUE, WHICH ALLOWED THE NEEDLE TO MOVE OUT OF ADJUSTMENT. OTHER CASE REPORTED IN FAR SP-9D-20-122F.						
CORRECTIVE ACTION-THE NEEDLE ORIFICE AREA WAS REPLACED WITH A SINGLE-HOLE ORIFICE. NEW CONFIGURATION IS DESIGNATED 27-04314-B.						
PASK 0018						

GENERAL DYNAMICS  
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE DATE	SITE TIME	PRI	VENDOR NAME
SUB-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE	TIME	OT	VENDOR PART NO
P.U./LOADING-GOC-A/B	BP-90-20-173F	7AR	820313	WTR	YES	60/C
MANOMETER	MANOREL	27-43016-19			NO	
<p>FAILURE MODE-CONTAMINATED-P/U SETS, 3/N 302 AND 303, WERE REPORTEDLY FAILED WHEN TEST POINT 2 WAS OUT OF TOLERANCE. THIS CONDITION INDICATED THAT THE MANORELS WERE CONTAMINATED. INVESTIGATION VERIFIED THAT ALL FOUR MANORELS WERE COATED WITH MERCURY DROPS.</p>						
<p>CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSING HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER 60/C SPEC. D-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETERS WAS ACCOMPLISHED BY E.O. BH-1 TO DWG 27-43016.</p>						
P.U./LOADING-GOC-A/B	A-92-20-157F	PAR	820306	ETM	YES	60/C
MANOMETER	MANOREL-MANOMETER ASST-P/U SYSTEM	27-43016-19			NO	
<p>FAILURE MODE-CONTAMINATION-P/U SET REPORTEDLY FAILED WHEN IT EXHIBITED NO ERROR DEMODULATOR OUTPUT VOLTAGE. FAILURE WAS FOUND TO BE CONTAMINATION FROM LOW PURITY MERCURY ON THE SURFACE OF THE FUEL MANOREL.</p>						
<p>CORRECTIVE ACTION-THIS P/U SET WAS MADE AND SENT TO THE FIELD BEFORE JANUARY 1962. CIC 13942-63-3 WAS IN EFFECT 29 JANUARY 1962. THIS CIC REQUIRES HIGH PURITY MERCURY BE USED IN THE MANOMETER ASSEMBLIES.</p>						
P.U./LOADING-GOC-A/B	AE61-1279/L2-403-00-112	FLIGHT	1120	WTR	YES	
MANOMETER	MANOMETER		820307		YES	
<p>FAILURE MODE-CONTAMINATION. THE ANOMALY IN THE EDO SIGNAL RESPONSE APPEARS TO INDICATE DIRTY MANOMETERS. SOURCE OF THIS CONTAMINATION IS UNKNOWN.</p>						
<p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. AT THE TIME OF LOX SENSOR PORT UNCOVERING, THE EDO SIGNAL MOVED TO A LOX RIC N BIAS OF APPROXIMATELY 3 VOLTS INSTEAD OF THE NOMINAL PLUS 10 VOLTS RESPONSE. HOWEVER, THE EDO SIGNAL WAS SUFFICIENT TO DRIVE THE PU VALVE TO THE CLOSED LIMIT POSITION OF 24.3 DEGREES.</p>						
<p>VEHICLE EFFECT-NONE</p>						
<p>CORRECTIVE ACTION-A PROCEDURE (D-75081) ON CLEANING REQUIREMENTS FOR THE MANOMETERS, A FACTORY REQUIREMENT CHANGE, REQUIRING A PLUS 3 VOLTS OUTPUT (IN ADDITION TO ANY CAPACITANCE PAD) FOR A ZERO PRESSURE MANOMETER READING OF THE SE RIES D PU CANISTERS, HAS BEEN RELEASED.</p>						
P.U./LOADING-GOC-A/B	A-23-20-093-P	PAR	1140	WTR	YES	
MANOMETER	VALVE-FLOW CONTROL	27-04314-1	811214		NO	
<p>FAILURE MODE-OUT OF TOLERANCE-VALVE REPORTEDLY FAILED WHEN EXCESSIVE FLOW RATES WERE RECORDED DURING PROPELLANT 8V8 TEN READINESS TEST. VALVE EXCESS FLOW RATE WAS DUE TO VENDOR SETTING THE VALVE WITH GAS RATHER THAN HELIUM.</p>						

GENERAL DYNAMICS  
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
							096190
	CORRECTIVE ACTION-QUALITY CONTROL TO (1) PURGE THE SUBJECT VALVES THAT DO NOT COMPLY WITH GO/C Q.C. SURVEY NO.27 AND (2) RECOMMEND TO THE VENDOR THAT HE REVIEW HIS ASSEMBLY METHODS TO AVOID A SCORED INNER FLOW CYLINDER.						
P.U./LOADING-GOC-A/B MANOMETER	SP-90-20-090F VALVE-FLOW CONTROL	FAR 27-04314-1	1140 011213	WTR	YES NO	GO/C	095490
FAILURE MODE-CONTAMINATION-ITEM VALVES REPORTEDLY FAILED DUE TO HIGH, OUT OF TOLERANCE, FLOW RATES. FOUR VALVES ARE REPORTED IN THIS FAILURE ANALYSIS REPORT. IT IS BELIEVED CONTAMINATION WAS PRESENT IN ORIFICE AREA DURING INITIAL SETTING OF ADJUSTMENT NEEDLE. LACK OF ADEQUATE TORQUE RESULTED IN THE MOVEMENT OF THE NEEDLE AND CHANGED THE EFFECTIVE AREA OF THE ORIFICE.							
CORRECTIVE ACTION-QUALITY CONTROL SUBMITTED WCAR TO VENDOR TO IMPROVE CLEANING PROCEDURES. THE NEEDLE ADJUSTMENT IS CORRECTED BY REPLACING NEEDLE ORIFICE ASSEMBLY WITH A SINGLE-HOLE ORIFICE. THE VALVE HAS BEEN REDESIGNATED 27-04314-3.							
							096190
P.U./LOADING-GOC-A/B MANOMETER	HG-98-20-114F MANOREL P/U SYSTEM	FAR 27-43016-13	109D 011204	ETR	YES NO	GO/C	096190
FAILURE MODE-FAIL DURING OPERATION-P/U SET REPORTEDLY FAILED DURING PERFORMANCE OF PROCEDURE 27-90202-BK-18. ANALYSIS IS VERIFIED BOTH MANORELS COATED WITH MERCURY DROSS, FUEL MANOREL HAVING THE HEAVIEST DEPOSIT.							
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSINGS HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER GO/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETERS WAS ACCOMPLISHED BY E.O. 8H-1 TO DWG NO. 27-43016.							
							096179
P.U./LOADING-GOC-A/B MANOMETER	HG-98-20-115F MANOREL-P/U SYSTEM	FAR 27-43016-13	51130	ETR	YES NO	GO/C	096179
FAILURE MODE-OUT OF TOLERANCE. TWO EDO VOLTAGE VERSUS PRESSURE RUNS WERE MADE WHICH WERE BEYOND TOLERANCE LIMITS. FAILURE IS ATTRIBUTED TO DROSS DEPOSITION ON THE FUEL MANOREL PRIOR TO AND DURING THE FIELD TESTS.							
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSINGS HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACES PER GO/C SPEC. 0-75089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETERS WAS ACCOMPLISHED BY E.O. 8H-1 TO DWG NO. 27-43016.							

GENERAL DYNAMICS  
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-60C-A/B MANOMETER	SB-98-20-082F VALVE-FLOW CONTROL	FAR 27-04314-1	811122	WTR	YES	60/C NO	895512
FAILURE MODE-CONTAMINATION-THE VALVE REPORTEDLY HAD A MARGINAL FLOW RATE. FAILURE IS ATTRIBUTED TO CONTAMINATION IN THE ORIFICE AREA. CONTAMINATION COULD HAVE COME FROM THE INTEGRAL 20 MICRON FILTER AND/OR FROM THE SYSTEM ITSELF.							
CORRECTIVE ACTION-QUALITY CONTROL TOOK CORRECTIVE ACTION BY HAVING VENDOR IMPROVE THE CLEANING PROCEDURE OF FILTERS . ALSO THE NEEDLE ORIFICE AREA WAS REPLACED WITH A SINGLE-HOLE ORIFICE. NEW CONFIGURATION IS DESIGNATED 27-04314-3.							
P.U./LOADING-60C-A/B MANOMETER	MC-58-20-079F VALVE FLOW CONTROL	FAR 27-04314-1	811101	ETR	YES	60/C NO	895513
FAILURE MODE-CONTAMINATION-THE LOW FLOW OUTPUT OF THE VALVE IS ATTRIBUTED TO FUEL CONTAMINATION. AFTER THE FUEL WAS REMOVED, FROM ORIFICE AREA, FLOW WAS NORMAL. IT IS SUSPECTED THE PRESSURE SUPPLY TO VALVE WAS TEMPORARILY OR PREMAT URELY CUT OFF ON THE CHECK VALVE UP STREAM FROM FLOW VALVE WAS STUCK IN CLOSED POSITION.							
CORRECTIVE ACTION-SITE WAS MADE AWARE OF THE RESULT OF ANALYSIS. SINCE THE MISSILE FROM WHICH THIS VALVE WAS REMOVE D HAD A SUCCESSFUL FLIGHT, THERE WILL BE NO ADDITIONAL CORRECTIVE ACTION TAKEN.							
P.U./LOADING-60C-A/B MANOMETER	A-90-20-093F MANUREL-MANOMETER-P/U SYSTEM	FAR 27-43009-807	24E 811031	WTR	YES	60/C NO	896189
FAILURE MODE-CONTAMINATION-ITEM FAILED DURING OPERATION OF MAPCHE DECK 240. P/U SYSTEM MANOMETER PRESSURE CHECKOUT, WHEN A MO-CO WAS RECEIVED, EDO TEST POINT 12. FAILURE WAS DUE TO CONTAMINATION DEPOSITED ON THE MANUREL. CONTAMINAT ION CONSISTED OF MERCURY DROPS AND REL-F GREASE. OTHER CASES REPORTED IN FAR A-90-20-094F, A-90-20-097F/A-90-20-098F AND A-90-20-103F.							
CORRECTIVE ACTION-REL-F LUBRICANT TO BE USED SPARINGLY AND ONLY IN AREAS DIVORCED FROM MERCURY, AND USE THE HIGH PU RITY MERCURY P-MIXED UNDER SPECIFICATION D-7102D.							
P.U./LOADING-60C-A/B MANOMETER	A-9K-20-107F MANUREL	FAR 27-43009-807	37E 810989	D	FAIRCHILD	YES	60/C NO
FAILURE MODE-OUT OF TOLERANCE, P/U SET FAILED DURING MAPCHE CHECK. AN OUT OF TOLERANCE CONDITION EXISTED DUE TO MER CURYCONTAMINATION DROPS IN BOTH MANOMETERS AND TO WATER AND REL-F GREASE IN THE FUEL MANOMETER.							



GENERAL DYNAMICS  
CONVAIR DIVISION

13 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE DATE	VEHICLE TIME	PRI	OTH	VENDOR NAME
BUS-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE	TIME	DIF	OTH	VENDOR PART NO
CORRECTIVE ACTION-REL-F LUBRICANT TO BE USED SPARINGLY AND ONLY IN AREAS DIVORCED FROM MERCURY, AND USE THE HIGH PU RITY MERCURY PURCHASED UNDER SPEC. 0-71020.							
P.U./LOADING-GDC-A/B	A-9F-20-108F	FAR	43E	WARREN	NO	60/C	996186
MANOMETER	MANOMETER	27-43009-007	610926		YES		996185
FAILURE MODE-CONTAMINATION-P/U SET FAILED DURING MAP-CHE CHECK. FUEL CONTAMINATION OF THE FUEL MANOMETER RESULTED IN A DECREASE OF FUEL MANOMETER CAPACITANCE. SINCE NO CONSTANT FLOW VALVE WAS REJECTED FOR LOW FLOW RATE. THIS FAILURE DUE TO A HUMAN ERROR.							
CORRECTIVE ACTION-NO ACTION TAKEN.							
P.U./LOADING-GDC-A/B	B9-20-074F	FAR	610901	SYCAMORE	YES	60/C	995513
MANOMETER	VALVE-FLOW CONTROL	27-04314-1		NO			
FAILURE MODE-OUT OF TOLERANCE-THE VALVE HAD A FLOW RATE BELOW THE SPECIFIED MINIMUM OF 3 SCFH. FAILURE OF VALVE IS ATTRIBUTED TO LOW TORQUE ON THE ADJUSTMENT NEEDLE. THE NEEDLE ADJUSTMENT WAS CHANGED BY JARRING OR VIBRATION.							
CORRECTIVE ACTION-GO/C TOOK DESIGN CORRECTIVE ACTION BY ELIMINATING THE ADJUSTMENT NEEDLE IN THE CONSTANT FLOW VALV E. NEEDLE ORIFICE ASSEMBLY WAS REPLACED WITH A SINGLE-HOLE ORIFICE BY CIC 07034. THE VALVE WAS REDESIGNATED AS 27-04 314-3.							
P.U./LOADING-GDC-A/B	AC-61-0036/32-501-A1-03	CAPTIVE	SE	SYC			995342
MANOMETER	FUEL MANOMETER BUBBLER VALVE		610829				
FAILURE MODE-ERRATIC OPERATION-ERRATIC DATA FROM THE ERROR DEMODULATOR VOLTAGE (U1091V), LOX TANK HEAD (U1080P) AND FUEL TANK HEAD (U1081P).							
SYSTEM EFFECT-POSSIBLE CONTAMINATION OF PU MANOMETER RESULTING IN FAILURE OF MANOMETER TO SENSE TRUE PRESSURE.							
VEHICLE EFFECT-POSSIBLE PREMATURE PROPULSION SHUTDOWN. INABILITY OF PU SYSTEM TO REGULATE FUEL LOX RATIO.							
CORRECTIVE ACTION-THE FUEL BUBBLER VALVE WILL BE REPLACED PRIOR TO SUBSEQUENT TESTING.							
P.U./LOADING-GDC-A/B	A-9H-20-087F	FAR	50E	FORGES	YES	60/C	
MANOMETER	MANOMETER-P/U SYSTEM	27-43009-807	610911	NO			
FAILURE MODE-OUT OF TOLERANCE-FUEL HEAD PRESSURE WAS DETERMINED TO BE 7 PSI GREATER THAN THE LOX ULLAGE PRESSURE. S ENSING LINES TO THE LOX ULLAGE AND FUEL HEAD MANOMETER PORTS WERE CROSSED DURING CONNECTION, AND REMAINING IN THAT M ANNER FOR THREE HOURS. NO PROPELLANTS WERE LOADED. MERCURY IN FORM OF LIQUID AND VAPOR WAS BLOWN INTO HEAD SENSING L INES TO COLLECT IN SURGE TANKS, SENSING LINES, AND PROPELLANT TANKS. OTHER CASE REPORTED IN FAR A-9H-20-083F, A-9H-2 0-084F.							

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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE	PRI OTH	VENDOR NAME VENDOR PART NO	
							003337
	CORRECTIVE ACTION-THCR-30444 TO T.O. 31-5M35E-RJ-12-1 GIVES A CLARIFICATION OF CONNECTIONS FROM P/U SET PRESSURE SENSING LINES TO MISSILE PRESSURE SENSING LINES. THE CHANGES AFFECT FIGURES 2-1, 4-1, AND 4-3.						
P.U./LOADING-GDC-A/B MANOMETER	9H-20-072 VALVE-P/U CONSTANT FLOW CONTROL	FAR 27-04314-1	610803	FORBES	YES NO	W.O. LEONARD	003373
FAILURE MODE-CONTAMINATION-FAILURE OF THIS VALVE WAS BY CONTAMINATION. THIS CONTAMINATION CAME FROM SOME SOURCE UP STREAM FROM THE FLOW VALVE AS EVIDENCED BY SIMILAR CONTAMINATION ON THE INLET FILTER.							
CORRECTIVE ACTION-SITE WAS NOTIFIED OF THE CAUSE OF FAILURE. RECOMMENDED REMOVAL AND CLEANING OF SYSTEM.							
P.U./LOADING-GDC-A/B MANOMETER	9B-20-048 VALVE	FAR 27-04314-1	610800	ETR	YES NO	LEONARD	009709
FAILURE MODE-OUT OF TOLERANCE. REJECTED ON FLOW RATE-SIX UNITS FOR LOW FLOW, ONE UNIT FOR HIGH FLOW. FAILURE ANALYSIS INDICATES A COMBINATION OF VENDOR ASSEMBLY AND CONTAMINATION PROBLEMS. (VARIOUS SITES) S/N 184, 485, 486, 293, 232, 233 FOR LOW FLOW, S/N 487 FOR HIGH FLOW.							
CORRECTIVE ACTION-THE VENDOR HAS REVIEWED HIS CLEANING AND ASSEMBLY METHODS. THE IMPROVED VALVES WILL BE IDENTIFIED WITH A WHITE STRIPE. MAP NO. 6487 INITIATED TESTS FOR A POTENTIAL REPLACEMENT VALVE.							
P.U./LOADING-GDC-A/B MANOMETER	SP-30-20-091F MANOMETER-P/U SYSTEM	FAR 27-43016-19	103D 610720	WTR	YES NO	GO/C	006181
FAILURE MODE-CUT OF TOLERANCE. P/U SET FAILED FOR OUT OF TOLERANCE EDO VOLTAGE READINGS. METAL ELEMENT CONTAMINATION OF MERCURY HAD FORMED A LAYER OF DROSS ON THE SURFACE OF THE MANOMETER. MOISTURE EFFECTS TO THE MANOMETER DIELECTRIC WAS DEMONSTRATED BY THE POSITIVE SHIFT IN EDO VALUES OBTAINED FOLLOWING THE FIRST TWO HOUR PURGE OF THE MANOMETER.							
CORRECTIVE ACTION-CLEANLINESS OF MANOMETER HOUSING HAS BEEN INCREASED BY A REQUIREMENT FOR ELECTROPOLISH OF INSIDE AND OUTSIDE SURFACE PER GO/C SPEC. 0-73089. INCLUSION OF HIGH PURITY MERCURY IN MANOMETERS WAS ACCOMPLISHED BY E.O. 84-1 TO OMC 27-43016.							
P.U./LOADING-GDC-A/B MANOMETER	AD61-0811/DAS16/L2-4MO-03-97 MANOMETER	COMPOSITE-FRD/DPL	97-D 610817	WTR	YES NO		
FAILURE MODE-LEAK-INTERNAL. POSSIBLE LOX MANOMETER MANOMETER DIELECTRIC LEAK OR O-RING SEAL LEAK AT TOP OF MANOMETER.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
SYSTEM EFFECT-IMPROPER ANALOG SIGNAL. EDO STEPPED FROM ZERO VDC TO 14VDC DURING COMMIT SEQUENCE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-P.U. MATCHED SET REPLACED.							097319
P.U./LOADING-60C-A/B MANOMETER	AAG1-0073/PI-SBN-01-17 MANOMETER	COMPOSITE-FRD/DPL	17E 610330	ETR	YES NO		093758
FAILURE MODE-ERRATIC OPERATION. DURING PROPELLANT TANKING, PU MATCHED SET 623 WAS NOT RESPONDING PROPERLY TO CHANGE 2 IN LOW TANK LEVEL. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. VEHICLE EFFECT-COUNTDOWN RESCHEDULED. DPL HAD TO BE REPEATED. CORRECTIVE ACTION-P/U MATCHED SET REPLACED.							096386
P.U./LOADING-60C-A/B MANOMETER	CT-98-20-001 CONSTANT FLOW VALVE	FAR 27-04314-1	610327	ETR	YES NO	YES LEONARD	093439
FAILURE MODE-OUT OF SPECIFICATION. SUBJECT VALVE, S/N 260 REPORTEDLY FAILED DUE TO HIGH FLOW RATE. VALVE CONTAINED SMALL AMOUNT OF CONTAMINATION IN NON-CRITICAL AREA, SMALL BURNS IN THE ORIFICE AREA AND A GROOVED NEEDLE. CORRECTIVE ACTION-VENDOR MODIFIED THE NEEDLE ADJUSTMENT PROCEDURE. VALVE IS CLEANED AFTER FINAL ADJUSTMENT.							093439
P.U./LOADING-60C-A/B MANOMETER	98-20-082F MANDREL	FAR 27-43009-601	610419	ETR	YES NO	YES 60/1	093439
FAILURE MODE-SHORT (ELECT)-DURING TESTS, THE LOW MANOMETER WAS FOUND TO HAVE A PARTIAL SHORT OF 3 TO 15 MEGOHMS RES TANCE WHEN PRESSURIZED TO 60 PSIG. WITH PRESSURE REDUCED TO ZERO THE SHORT STILL EXISTED. FAILURE WAS VERIFIED. A PUNCTURE OF SMALL DIAMETER EXISTED THROUGH THE DIELECTRIC NEAR BOTTOM OF MANDREL.							093439
CORRECTIVE ACTION-INVESTIGATION OF AN INCREASED DIELECTRIC VOLTAGE TEST WAS MADE USING AS MUCH AS 1000 VOLTS DC ACR OSS THE MANDREL DIELECTRIC. NO FAILURE WAS PRODUCED. TEST PROCEDURES WILL NOT BE CHANGED.							093439
P.U./LOADING-60C-A/B MANOMETER	CT-98-20-001 CONSTANT FLOW VALVE	FAR 27-04314-1	610404	ETR	YES NO	YES LEONARD	093439
FAILURE MODE-OUT OF SPECIFICATION. SUBJECT VALVE S/N 106 REPORTEDLY FAILED DUE TO LOW FLOW RATE. VALVE HAD LOW TORQ UE VALVE ON THE NEEDLE ADJUSTMENT.							093439



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
							895335
CORRECTIVE ACTION-NO HARDWARE ACTION TAKEN. DESIGN GROUP WILL MAKE A DETAILED STUDY OF MANOMETER CONTAMINATION ON WAP 5647 TO DETERMINE THE POSSIBLE SOURCES OF AND METHODS TO CONTROL THE CONTAMINATION. THE STUDY WAS INITIATED ON 8/7/61.							
P.U./LOADING-GDC-A/B MANOMETER	AE61-0014/PC-4CO-01-105 MANOMETER	COMPOSITE-FACTORY	105D 810119	FACTORY	NO	60/C NO	899427
FAILURE MODE-FAILED DURING OPERATION-ERROR RATIO DEMODULATOR OUTPUT BECAME ERRATIC. TROUBLE TRACED TO AN INADVERTANT BLEED OF TEST PRESSURE AT 634 SECONDS OF TEST.							
SYSTEM EFFECT-ERRATIC OPERATION-OUTPUT SIGNALS SWITCHED POLARITY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE-TEST PROGRAM HAD BEEN COMPLETED AT 50 SECONDS OF TEST TIME.							
P.U./LOADING-GDC-A/B MANOMETER	9K-20-43 MANOMETER	FAR 27-43009	13E 810116	FAIRCHILD D	YES NO	60/C NO	89: 136
FAILURE MODE-OUT OF TOLERANCE-SET REJECTION WAS DUE TO TEST NO. 1 FALLING OUTSIDE OF TOLERANCE WHICH GAVE A MAPCHE NO-GO INDICATION. FAILURE AS REPORTED COULD NOT BE VERIFIED DURING LABORATORY TESTS. EITHER THE MAPCHE NO-GO INDICATION WAS IN ERROR OR THE MANOMETER STATIC LINE FILTERS AT THE BASE HAD NOT BEEN MAINTAINED PROPERLY.							
CORRECTIVE ACTION-NONE-FAILURE COULD NOT BE VERIFIED.							
P.U./LOADING-GDC-A/B MANOMETER	9K-20-088 MANOMETER	FAR 27-43016-13	810113	ETR	YES NO	60/C NO	895336
FAILURE MODE-OUT OF TOLERANCE. SUBJECT UNIT REPORTEDLY FAILED TO MEET TOLERANCE LIMITS DURING PERFORMANCE OF A THIRTEEN POINT CHECK. THE DRIFT IN EDO BETWEEN 13 POINT CHECKS WAS PRODUCED BY MOISTURE EFFECTS IN MABELON 8 DIELECTRIC OF THE MANOMETERS, AND MERCURY CONTAMINATION.							
CORRECTIVE ACTION-NOT KNOWN-STUDY TO BE MADE.							
P.U./LOADING-GDC-A/B MANOMETER	9K-20-057 PU MATCHED SET-MANOMETER	FAR 27-43009-601	14E 601229	PAPB	YES NO	60/C NO	
FAILURE MODE-CONTAMINATION TO MERCURY CROSS CONTAMINATION ON MANOMETER.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-60/C INITIATED A STUDY UNDER MAP 9647 ON 810607 TO DETERMINE SOURCE OF CONTAMINATION.							000754
P.U./LOADING-60C-A/B MANOMETER	98-20-036 MANOMETER	FAR 27-43016-17	601209	ETR	YES NO	60/C	000843
FAILURE MODE-CONTAMINATION. DROSS CONTAMINATION IN MANOMETERS ALTERED DIELECTRIC CONTENT OF MANOMETER.							
CORRECTIVE ACTION-60/C INITIATED STUDY ON 810607 BY MAP 9674 TO DETERMINE SOURCES OF CONTAMINATION.							
P.U./LOADING-60C-A/B MANOMETER	98-20-036 MANOMETER	FAR 27-43016-17	601209	ETR	YES NO	60/C	000844
FAILURE MODE-OUT OF TOLERANCE. OUT OF TOLERANCE IN A FUEL RICH CONDITION. CAUSE TRACED TO MERCURY DROSS CONTAMINATION IN THE MANOMETERS.							
CORRECTIVE ACTION-60/C INITIATED STUDY ON 810607 BY MAP 9647 TO DETERMINE SOURCES OF CONTAMINATION.							000966
P.U./LOADING-60C-A/B MANOMETER	AC-60-0050/81-811-AT-05 MANOMETER	CAPTIVE 27-43009	5E 601125	SYC	YES NO		
FAILURE MODE-FAILURE DURING OPERATION- EDO INDICATED AN ERRONEOUS MASS RATIO.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNAL- P.U. SYSTEM DID NOT CONTROL THE IMBALANCE IN RESIDUAL PROPELLANTS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-60C-A/B MANOMETER	AC-60-0047/81-810-A8-05 MANOMETER	CAPTIVE 27-43009	5E 601117	SYC	YES NO		000969
FAILURE MODE-FAILURE DURING OPERATION- EDO INDICATED AN ERRONEOUS MASS RATIO							
SYSTEM EFFECT-IMPROPER ANALOG SIGNAL- P.U. SYSTEM DID NOT CONTROL THE IMBALANCE IN RESIDUAL PROPELLANTS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF OTH	VENDOR NAME VENOM PART NO
P.U./LOADING-60C-A/B MANOMETER	90-20-033 MANOMETER-LO2	PAR 27-43018-19	7.0 -01117	WTR	YES 60/C NO
FAILURE MODE-CONTAMINATION-MANOMETER-LOX WAS FOUND CONTAMINATED WITH TEN TYPES OF MATERIALS.					
CORRECTIVE ACTION-60/C INITIATED STUDY ON 810407 BY WAP 5847 TO DETERMINE SOURCES OF CONTAMINATION.					
P.U./LOADING-60C-A/B MANOMETER	AC-60-0048/81-508-A3-05 MANOMETER	CAPTIVE 27-43009-3	SE 801109	SYC	YES NO
FAILURE MODE-FAILURE DURING OPERATION- EDO INDICATED AN ERRONEOUS MASS RATIO.					
SYSTEM EFFECT-IMPROPER ANALOG SIGNAL- P.U. SYSTEM DID NOT CONTROL THE IMBALANCE IN RESIDUAL PROPELLANTS.					
VEHICLE EFFECT-NONE.					
CORRECTIVE ACTION-UNKNOWN.					
P.U./LOADING-60C-A/B MANOMETER	AC-60-0048/81-508-A4-05 MANOMETER	CAPTIVE 27-43009-3	SE 801026	SYC	YES NO
FAILURE MODE-FAILURE DURING OPERATION- EDO INDICATED AN ERRONEOUS MASS RATIO.					
SYSTEM EFFECT-IMPROPER ANALOG SIGNAL- P.U. SYSTEM DID NOT CONTROL THE IMBALANCE IN RESIDUAL PROPELLANTS.					
VEHICLE EFFECT-NONE.					
CORRECTIVE ACTION-MANOMETERS WERE DISASSEMBLED AND RE-CHECKED AND SUBSEQUENTLY REPLACED.					
P.U./LOADING-60C-A/B MANOMETER	AC-60-0044/81-507-A3-05 MANOMETER	CAPTIVE 27-43009	SE 801020	SYC	YES NO
FAILURE MODE-FAILURE DURING OPERATION- EDO INDICATED ERRONEOUS MASS RATIO.					
SYSTEM EFFECT-IMPROPER ANALOG SIGNAL- P.U. SYSTEM DID NOT CONTROL THE IMBALANCE IN THE RESIDUAL PROPELLANTS DURING THE TEST.					
VEHICLE EFFECT-NONE.					
CORRECTIVE ACTION-UNKNOWN.					

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B MANOMETER	ETR-029/14-323-J2-3E LOX MANOMETER SENSE LINE	CAPTIVE	801013	ETR	YES NO		889999
<p>FAILURE MODE-FAILURE DURING OPERATION- THE LOX MANOMETER SENSE LINES WERE REVERSED AT THE MANOMETER BOX. THE P.U. V ALVE REMAINED AT THE FULL OPEN POSITION (47.5 DEG) THROUGHOUT THE TEST.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.-</p> <p>VEHICLE EFFECT-TEST ABORTED AND RE-SCHEDULED- THE TEST WAS PREMATURELY TERMINATED BY THE TEST CONDUCTOR TO PREVENT A POSSIBLE FUEL LOW LEVEL CUTOFF.</p> <p>CORRECTIVE ACTION-PUT SENSE LINE IN PROPER CONFIGURATION.</p>							
P.U./LOADING-GDC-A/B MANOMETER	AC-80-0038/81-903-A1-03 MANOREL	CAPTIVE	5E 601004	BYC	YES NO		889999
<p>FAILURE MODE-OUT OF SPECIFICATION. EDO PRODUCED FALSE INDICATION OF MIXTURE RATIO DUE TO CONTAMINATION OF THE MANOMETER ETER MANOREL.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS- SUSTAINER P.U. VALVE WAS INCORRECTLY POSITIONED DURING HOT FIRING TEST.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-MANOMETER MANORELS WERE CLEANED AND SATISFACTORILY RE-TESTED TO SPECIFICATIONS.</p>							
P.U./LOADING-GDC-A/B MANOMETER	98-20-033 MANOREL	FAR 27-43009-3	600900	ETP	YES 60/C NO		889431
<p>FAILURE MODE-OUT OF TOLERANCE. OUT OF TOLERANCE AT LOWER TEST POINT WAS CAUSED BY MERCURY DROPS ON THE LOWER CONICAL SECTION OF THE LOX MANOREL. THE MERCURY DROPS WAS CAUSED BY EXCESS MERCURY AND FOREIGN MATERIAL INDICATES THAT SUFFICIENT CARE WAS NOT EXERCISED DURING MANUFACTURING AND CALIBRATION OF SETS.</p> <p>CORRECTIVE ACTION-60/C HAS TAKEN ACTION THROUGH QUALITY CONTROL PROCEDURES TO REITERATE THE NEED FOR CLEANLINESS AND CARE DURING ASSEMBLY AND CALIBRATION OF P/U MATCHED SETS.</p>							
P.U./LOADING-GDC-A/B MANOMETER	90-20-032 MANOREL-FUEL	FAR 27-43018-17	33D 600701	WTR	YES 60/C NO		888737
<p>FAILURE MODE-CONTAMINATION. MERCURY USED IN FUEL MANOMETER WAS FOUND TO BE CONTAMINATED.</p> <p>CORRECTIVE ACTION-60/C TOOK ACTION THROUGH QUALITY CONTROL PROCEDURES TO INSURE THAT MANOMETER HOUSINGS ARE CLEAN PRIOR TO COATING WITH PROTECTIVE COVERING.</p>							



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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING STATION-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE	SITE	PRI	VEHICLE NAME
410-5-37EN	FAILED COMPONENT NAME	PART NUMBER	DATE DIP	TIME DIP	OTH	VENDOR PART NO
P.U./LOADING-GOC-A/B MANOMETER	90-20-028 MANOREL-MANOMETER	FAR 27-43018-17	230 800700	WTR	YES NO	YES 60/C NO
FAILURE MODE-OUT OF TOLERANCE PRIOR TO INSTALLATION ON 230. LOSS OF MERCURY WAS CONFIRMED BY FAILURE ANALYSIS AND WAS DUE TO IMPROPER TRANSPORTATION AT THE TEST SITE. HUMAN INITIATED ERROR UNIT 8/N 218						
CORRECTIVE ACTION-TEST SITE PERSONNEL WERE NOTIFIED OF THE NEED FOR STRICT ADHERENCE TO THE EXISTING HANDLING PROCEDURES.						
P.U./LOADING-GOC-A/B MANOMETER	20-20-029 MANOREL-INSULATION	FAR 27-43018	800700	ETR	YES NO	YES 60/C NO
FAILURE MODE-OUT OF TOLERANCE OF THE ERROR DEMODULATOR OUTPUT (EDOS) DURING CHECKOUT AT THE ETR TELEMETRY LABORATORY. FAILURE ANALYSIS INDICATED THE MURELON-8 DIELECTRIC CHARACTERISTICS WERE CHANGED BY THE GAIN OR LOSS OF WATER BY THE COATING. UNIT 3/MS 256 AND 302.						
CORRECTIVE ACTION-FACTORY AND R AND D TEST SITE TEST EQUIPMENT WAS MODIFIED WITH ADDITION OF A FILTER-DRYER TO ALLOW ONLY GAS OF LESS THAN 1.0 PERCENT RELATIVE HUMIDITY TO ENTER THE MANOMETERS.						
P.U./LOADING-GOC-A/B MANOMETER	98-20-033 MANOREL-LO2	FAR 27-43018-17	800620	AMR	NO NO	NO 60/C NO
FAILURE MODE-OUT OF TOLERANCE ON SPECIFICATION. FAILURE COULD NOT BE VERIFIED.						
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.						
P.U./LOADING-GOC-A/B MANOMETER	98-20-030 MANOREL	FAR 27-43018	580 800324	WTR	YES NO	YES 60/C NO
FAILURE MODE-CONTAMINATION ON MANOREL DURING OPERATION. MERCURY BECAME CONTAMINATED BECAUSE OF OPEN ULLAGE LINE AND MANOMETER HOUSING WELDED OVERLAP, WHICH TRAPS CONTAMINATION DURING MANUFACTURE. ACRYLIC PROTECTIVE COATING PT801 WAS NOT APPLIED TO THE MANOMETER HOUSINGS.						
CORRECTIVE ACTION-COATING OF MANOMETER HOUSINGS WITH PT801 WAS STARTED 1 MARCH 1980. PROTECTIVE COATING IS BEING ACCOMPLISHED ON A NON-RETROFIT BASIS. ITEM SET WAS MANUFACTURED PRIOR TO THE START OF COATING HOUSINGS.						

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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GOC-A/B MANOMETER	98-20-088 MANOMETER	PAR 27-43018-17	23D 800420	WTR	YES NO	60/C	898728
FAILURE MODE-OUT OF TOLERANCE. EDD SIGNAL SENT DURING NEGATIVE DIRECTION. MOVEMENT AT TEST POINTS 4, 5, 6, 9, 13. U NIT 8/H 250.							
CORRECTIVE ACTION-NONE-FAILURE WAS NOT CONFIRMED.							
P.U./LOADING-GOC-A/B MANOMETER	98-20-025 MANOMETER	PAR 27-43018-17	56D 800414	ETR	YES NO	60/C	898728
FAILURE MODE-ERRATIC OPERATION AND FAILURE TO ADJUST OR CONTROL THE P/U VALVE ON 56D. FAILURE WAS NOT CONFIRMED DURING FAILURE ANALYSIS. UNIT 8/H 210.							
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.							
P.U./LOADING-GOC-A/B MANOMETER	98-20-020 MANOMETER	PAR 27-43018-503	32D 800408	WTR	YES NO	60/C	898732
FAILURE MODE-OUT OF SPECIFICATION IN NEGATIVE WHICH INDICATED THE P/U SET WAS MATCHED IN A FUEL RICH CONDITION. FAILURE WAS NOT CONFIRMED DURING FAILURE ANALYSIS. UNIT 8/H 266.							
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.							
P.U./LOADING-GOC-A/E MANOMETER	DA182/DE-402-00-25 BURGLER VALVE	COUNTDOWN	23D 800407	WTR	YES NO		898890
FAILURE MODE-FAIL DURING OPERATION-VALVE WAS NOT FLOWING ENOUGH HELIUM TO KEEP FUEL SENSE LINE FREE OF FUEL. SYSTEM EFFECT-IMPROPER ANALOG COMMANDS.-EDD OUTPUT INDICATED LOS TANK 90 PERCENT FULL 2 MINUTES 18 SECONDS AFTER LOS RAPID LOAD START. VEHICLE EFFECT-COUNTDOWN ABORTED. CORRECTIVE ACTION-VALVE WAS REPLACED.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B MANOMETER	DA17/B2-4NO-28-25 MANOMETER	COMPOSITE-FRD/DPL	25D 600329	WTR	YES NO		898813
<p>FAILURE MODE-CONTAMINATION. ERRONEOUS LOX TANK 90 PCT FULL INDICATIONS RECEIVED DUE TO MERCURY IN THE PURGE TANK ON THE HIGH PRESSURE SIDE OF THE FUEL MANOMETER.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-COUNTDOWN ABORTED.</p> <p>CORRECTIVE ACTION-PROPELLANT UTILIZATION SET WAS REPLACED.</p>							
P.U./LOADING-GDC-A/B MANOMETER	AA60-0130/P2-48N-03-55	COMPOSITE-FRD/DPL	55D 600321	ETR	NO NO		493990
<p>FAILURE MODE-CONTAMINATION. PU FUEL SENSING SYSTEM CONTAMINATED WITH FUEL AS A RESULT OF OVERTANKING FUEL APPROXIMATELY 120 TO 130 GALLONS.</p> <p>SYSTEM EFFECT-CONTAMINATION.</p> <p>VEHICLE EFFECT-COMPOSITE AND TANKINGS DELAYED AND RESCHEDULED.</p> <p>CORRECTIVE ACTION-LINES AND COMPONENTS REMOVED, CLEANED AND REINSTALLED OR REPLACED. SOME PARTS OF SYSTEM PURGED IN PLACE.</p>							
P.U./LOADING-GDC-A/B P.U./LOADING-GDC-A/B MANOMETER	90-2D-023	FAR 27-43016-503	25D 600314	WTR	YES 60/C NO		895434
<p>FAILURE MODE-CONTAMINATION DEPOSITED ON THE MANOMETERS. CONTAMINATION EMANATED FROM THE WELDED OVERLAPS ON THE MANOMETER HOUSING RESERVOIR. THE DEPOSIT WAS ON ONE SIDE OF THE ENTIRE LENGTH OF EACH MANOMETER SINCE AT SOME UNKNOWN TIME THE SET HAD BEEN STORED OR TRANSPORTED ON ITS SIDE.</p> <p>CORRECTIVE ACTION-60/C NOTIFIED OPERATING PERSONNEL OF THE NEED FOR STRICT ADHERENCE TO THE EXISTING HANDLING PROCEDURES WHICH PROHIBIT THE HORIZONTAL TRANSPORTATION OF P/U SETS.</p>							
P.U./LOADING-GDC-A/B MANOMETER	98-2D-021 MANOMETER	FAR 27-45002-803	42D 600309	ETR	YES 60/C NO		
<p>FAILURE MODE-OUT OF TOLERANCE DURING CHECKOUT FOR TEST POINTS 18 AND 26. FAILURE WAS NOT CONFIRMED DURING THE FAILURE ANALYSIS. UNIT 8/N 303.</p>							



GENERAL AMICS  
CONVAIR DIVISION

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B MANOMETER	98-20-018 MANOREL-MANOMETER ASSY	FAR 27-43016	600300	ETR	YES	50/C NO	998436
FAILURE MODE-CONTAMINATION WAS CAUSE OF FAILURE OF P/U SET LISTED BELOW. CONTAMINATION SOURCED FROM THE MANOMETER HOUSINGS IN EACH CASE. MATCH SETS 8/N ARE 210, 213, 221, 234, 233, AND 241 AS LISTED IN FAR 98-20-018.							
CORRECTIVE ACTION-50/C HAS DEVELOPED A METHOD FOR APPLYING AN ACRYLIC RESIN (PT-201) TO INTERIOR SURFACE OF THE MANOMETER HOUSINGS. COATING WILL ENTRAP AND HOLD ALL CONTAMINANTS WHICH EXIST IN THE OVERLAPS AND WELDS OF THE HOUSING.							
P.U./LOADING-GDC-A/B MANOMETER	98-20-022 MANOREL	FAR 27-43002-803	42D 600212	ETR	YES	50/C NO	998726
FAILURE MODE-OUT OF TOLERANCE AT TEST POINTS 15 AND 26 DURING CHECKOUT OF 42D. FAILURE HAS NOT CONFIRMED DURING FAILURE ANALYSIS. UNIT 3/N 308.							
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.							
P.U./LOADING-GDC-A/B MANOMETER	DA152/B2-4NO-08-23 MANOMETER	COMPOSITE-PRD/DPL	23D 600109	WTR	YES	NO	998818
FAILURE MODE-ERRATIC OPERATION. ERRONEOUS READING RECEIVED FROM THE ERROR DEMODULATOR OUTPUT. MANOMETERS CHECKED AND FOUND TO BE CONTAMINATED.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-COUNTDOWN ABORTED.							
CORRECTIVE ACTION-PU MATCHED SET REPLACED.							
P.U./LOADING-GDC-A/B MANOMETER	DA152/B2-4NO-07-23 MANOMETER	COMPOSITE-PRD/DPL	23D 600107	WTR	YES	NO	998810
FAILURE MODE-CONTAMINATION. DURING FUEL LOAD, THE EDO INDICATED ERRATIC OPERATION. INVESTIGATION INDICATED CONTAMINATED MANOMETERS.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-COUNTDOWN ABORTED.							
CORRECTIVE ACTION-P.U. MATCHED SET WAS REPLACED.							

GENERAL INICS  
CONVAIR DIVISION

18 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B MANOMETER	98-20-015 TANK-P/U SURGE	FAR 7-43025-3	340 600100	WARREN	YES NO	YES NO	999421
FAILURE MODE-CONTAMINATION-REASON FOR REJECTION OF FOUR SURGE TANKS FROM MISSILE 340 WAS DUE TO CORROSION ON THE EXTERIOR WELD AREA. SUBJECT TANKS REVEALED THE INTERIOR SURFACES AS WELL AS THE EXTERIOR WERE CORRODED. CORROSION WAS OVER ENTIRE SURFACE AND NOT CONCENTRATED AT WELD AREA.							
CORRECTIVE ACTION-GD/C TOOK ACTION TO DEVELOP A METHOD FOR APPLICATION OF A PROTECTIVE COATING ON BOTH THE INTERIOR AND EXTERIOR SURFACES.							
P.U./LOADING-GDC-A/B MANOMETER	9-1612/81-406-83-36 MANOMETER	CAPTIVE	360 991207	SYC	YES NO		999100
FAILURE MODE-CONTAMINATION. POST TEST INSPECTION REVEALED THAT THE PU MANOMETERS WERE OUT OF CALIBRATION NEAR THE TOP AND CONTAMINATED IN GENERAL. CONTAMINATION ATTRIBUTED TO THE 3 ONE HOUR HOLD WHICH OCCURRED DURING THE SOAK TEST 8.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-PU MATCHED SET CLEANED AND RECALIBRATED.							
P.U./LOADING-GDC-A/B MANOMETER	PTAB110/PI-404-00-16	COUNTDOWN	180 991006	ETR -18	NO NO		999346
FAILURE MODE-OUT OF TOLERANCE. LOX LEVEL WAS TOO HIGH FOR LAUNCH DUE TO TANKING ERROR.							
SYSTEM EFFECT-OPERATION TOO HIGH. LOW LEVEL T-O HIGH.							
VEHICLE EFFECT-COUNTDOWN DELAYED TO ADJUST LOW LEVEL 8 MINUTES HOLD AND 7 MINUTES RECYCLE.							
CORRECTIVE ACTION-LOW LEVEL ADJUSTED.							
P.U./LOADING-GDC-A/B MANOMETER	98-20-012 VALVE-P U CONSTANT FLOW CONTROL	FAR 87-04314-1	991000	ETR	YES NO	YES NO	999424
FAILURE MODE-OUT OF SPECIFICATION-FAILURE REVEALED DURING TANKING TEST WHEN FUEL LEAKED INTO MANOMETER CAUSING THE WRONG OUTPUT SIGNAL. INVESTIGATION REVEALED NO OUTPUT FROM THIS VALVE.							
CORRECTIVE ACTION-LOCKING TORQUE ON THE FLOW ADJUSTING NEEDLE WILL BE INCREASED AND TORQUE PAINT WILL BE APPLIED AFTER ADJUSTMENT, A FIXED ORIFICE WAS INCORPORATED.							

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CONVAIN DIVISION

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-60C-A/B MANOMETER	9B-20-012 VALVE-P.U. CONSTANT FLOW CONTROL	FAR 27-04314-1	591000	ETR	YES NO	YES W.O. LEONARD
FAILURE MODE-OUT OF SPECIFICATION-VALVE WAS FOUND TO BE FLOWING AT A RATE APPROXIMATELY TWICE THE SPECIFICATION UNIT IS.						
CORRECTIVE ACTION-LOCKING TORQUE ON THE FLOW ADJUSTING NEEDLE WILL BE INCREASED AND TORQUE PAINT WILL BE APPLIED AFTER ADJUSTMENT. A FIRED ORIFICE WAS INCORPORATED.						
P.U./LOADING-60C-A/B MANOMETER	9B-20-012 VALVE-P.U. CONSTANT FLOW CONTROL	FAR 27-04314-1	591000	ETR	YES NO	YES W.O. LEONARD
FAILURE MODE-OUT OF SPECIFICATION-POST RUN CHECK REVEALED A LOW FLOW CONDITION. THE VALVE HAD BEEN THROUGH ONE TEST FIRING.						
CORRECTIVE ACTION-LOCKING TORQUE ON THE FLOW ADJUSTING NEEDLE WILL BE INCREASED AND TORQUE PAINT WILL BE APPLIED AFTER ADJUSTMENT. A FIRED ORIFICE WAS INCORPORATED.						
P.U./LOADING-60C-A/B MANOMETER	9B-20-011 MANDREL	FAR 27-43016	590916	FACTORY	YES NO	YES 60/C
FAILURE MODE-CONTAMINATION-CONTAMINATION IS CONSIDERED THE PRINCIPAL CAUSE OF THE RECENT PROPELLANT UTILIZATION MATED SET FAILURES.						
CORRECTIVE ACTION-NONE-PENDING ACTION OF COMMITTEE CONSISTING OF ENGINEERING MANUFACTURING AND QUALITY CONTROL.						
P.U./LOADING-60C-A/B MANOMETER	0A83/AL-4MO-01-19 BUBBLER VALVE CRIFICE	COMPOSITE-FRD/ORL	190 590030	INTR	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-ORIFICE OF VALVE WAS PLUGGED.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.-PLUGGED ORIFICE PREVENTED PRESSURIZATION OF THE HIGH PRESSURE LINE OF THE FUEL MANOMETER AND ALLOWED FUEL TO MIX WITH THE MERCURY. CONSEQUENTLY, THE COMPUTOR-COMPARATOR SENSED A LARGER VOLUME OF FUEL THAN ACTUALLY EXISTED AND COMMANDED THE PLCU TO OVERLOAD LOX IN AN ATTEMPT TO REACH THE SPECIFIED OXYGEN-TO-FUEL RATIO.						
VEHICLE EFFECT-COUNTDOWN ABORTED-POST TEST INVESTIGATION REVEALED LOX HAD OVERFLOWED THROUGH THE BOIL OFF VALVE.						
CORRECTIVE ACTION-UNKNOWN.						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GOC-A/B MANOMETER	08-20-DID VALVE-P.U. CONSTANT FLOW CONTROL	FAR 27-04314-1	24D 590825	STANMORE	YES	LEONARD NO	895401
FAILURE MODE-OUT OF SPECIFICATION. DURING CHECKOUT THE FLOW RATE EXCEEDED SPECIFICATION LIMITS. VALVE HAD NO RECORD OF OPERATING TIME. VALVE WAS LOCATED IN THE LOX HEAD PRESSURE SENSING LINE TO THE P/U LOX MANOMETER.							
CORRECTIVE ACTION-NEW REGULATOR BEING DESIGNED WHICH REPLACES T1 Z REGULATOR NEEDLE WITH A SINTERED PLUG ORIFICE.							
P.U./LOADING-GOC-A/B MANOMETER	9A-20-008 VALVE-P.U. CONSTANT FLOW CONTROL	FAR 27-04314	590800	ERR	YES	W.O. LEONARD NO	895523
FAILURE MODE-OUT OF SPECIFICATION-S/N 199 AND 179 WERE SUSPECTED TO BE CONTAMINATED DUE TO THE MISSISSIPPI HELIUM PURGE SYSTEM INADVERTENTLY BEING TURNED OFF. FAILURE ANALYSIS FOUND THE VALVE FAILURE WAS DUE TO THE LOOSE REGULATOR VALVE NEEDLE.							
CORRECTIVE ACTION-A NEW REGULATOR IS BEING DESIGNED WHICH REPLACES THE REGULATOR NEEDLE WITH A SINTERED PLUG ORIFICE.							
P.U./LOADING-GOC-A/B MANOMETER	FTAS016/P2-308-00-08 DEMODULATOR	COUNTDOWN	SC 590721	ETR -40	YES NO		895543
FAILURE MODE-DUE TO SLOW RECOVERY OF THE EDO FROM EFFECTS OF REG 3 PRESSURIZATION, THE PLCU INDICATED A NO-GO FOR TANKING CONDITION.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE PLCU EDO WAS INDICATING AN ERRONEOUS LOX LEVEL DUE TO SLOW RECOVERY FROM SEQUENCE 3.							
VEHICLE EFFECT-NONE. LOX TANKING NO-GO RECEIVED AT FIRST CALL ON STATUS CHECK AT -40, BUT GO ON RECALL.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GOC-A/B MANOMETER	FTAS016/P2-39N-02-08 FUEL SENSING LINE	COMPOSITE-FRD/DPL	SC 590312	ETR	YES NO		895553
FAILURE MODE-ERRATIC OPERATION. DURING FUEL TANKING ERRATIC EDO SIGNALS WERE RECORDED.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-POST TEST INVESTIGATION REVEALED THAT THE FUEL HEAD SENSING LINE WAS DISCONNECTED AND CAPPED OFF AT THE FUEL TANK APEX. THE LINE WAS REPLACED.							



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SYSTEM	TEST/REPORT NUMBER	TEST COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OIM	VENDOR NAME VENDOR PART NO
P.U./LOADING-60C-A/B MANOMETER	14-406-02-20 PU MANOMETER MANOREL		CAPTIVE	390324	1-4	YES NO	
<p>FAILURE MODE-CONTAMINATION. FUEL AND LOZ MANOMETER MANORELS COATED WITH MERCURY SCUM.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. CONTAMINATION RESULTED IN A FALSE FUEL RICH ERROR SIGNAL FOR THE SUSTAINER ENGINE AND OPENED THE PU VALVE TO ITS LIMIT.</p> <p>VEHICLE EFFECT-PREATURE SUSTAINER ENGINE SHUTDOWN. AT 242.9 SECONDS THE PU MANUAL OVERRIDE WAS ACTIVATED WHICH BROUGHT THE SUSTAINER ENGINE TO NORMAL MIXTURE RATIO, HOWEVER, TOO MUCH FUEL HAD BEEN CONSUMED AND FUEL DEPLETION OCCURRED AT 278.3 SECONDS.</p> <p>CORRECTIVE ACTION-INSTRUMENT GRADE MERCURY AND STRICT ADHERENCE TO PROPER CLEANING PROCEDURES SHOULD BE USED WITH CONVAIR PU MANOMETERS. ALSO CALIBRATION EQUIPMENT MUST BE PROVIDED TO SIMULATE PROPELLANT LOADS IN ORDER TO DETERMINE PROPER OPERATION OF PU SYSTEM PRIOR TO EACH HOT FIRING.</p>							
P.U./LOADING-60C-A/B MANOMETER	32-402-A1-02 SUBBLER SYSTEM BLEED VALVE		CAPTIVE	2D 510319	SYC	YES NO	
<p>FAILURE MODE-OUT OF TOLERANCE. FLOW RATE THRU VALVE WAS CONSIDERABLY BELOW NOMINAL DUE TO CONTAMINATED BLOCKING VALVE.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNAL. FUEL MANOMETER SENSED ONLY PORTION OF FUEL ABOARD DUE TO LOW BUBBLE HELIUM PRESSURE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-REPLACE VALVE.</p>							
P.U./LOADING-60C-A/B MANOMETER	89-20-001 MANOREL		FAR 7-43G18-87	2C 590104	SYCAMORE 110	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION-FAILURE OCCURRED AT ABOUT 110 SECONDS INTO RUN OF THE OPERATION OF THE LOZ MANOMETER BECAME ERRATIC.</p> <p>CORRECTIVE ACTION-MANOREL DIELECTRIC COATING WAS REPLACED WITH A NEW TYPE OF COATING.</p>							
P.U./LOADING-60C-A/B MANOMETER	81-306-84-02 FUEL MANOMETER MANOREL		CAPTIVE	2C 591224	81	YES NO	
<p>FAILURE MODE-CONTAMINATION. FUEL ENTERED THE FUEL MANOMETER BY CAPILLARY ACTION RESULTING IN SOFTENING THE MANOREL COATING. THIS PRODUCED A LOSS IN CAPACITANCE OF 8 PERCENT.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNAL. PROPELLANT RATIOS WERE NOT PROPERLY SENSED.</p>							

GENERAL DYNAMICS  
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRSCANE													
SYSTEM		TEST/REPORT NUMBER		DIP DATA SOURCE		VEHICLE DATE DIP		SITE TIME DIP		PPI OTH		VENDOR NAME	
803-SYSTEM		FAILED COMPONENT NAME		PART NUMBER		DATE DIP		TIME DIP				VENDOR PART NO	
VEHICLE EFFECT-NONE.													
CORRECTIVE ACTION-UNKNOWN.													
P.U./LOADING-60C-A/B		FTA4512/P4-201-00-13		FRF		1P 56.222		14 -125		YES NO		PERIOD	
FAILURE MODE-ERRATIC OPERATION. AFTER SEGMENT III PRESSURE AND LOX PUMP, THE EDO EXHIBITED LARGE OSCILLATIONS PERIODICALLY UNTIL T-7 SECONDS.													
SYSTEM EFFECT-ERRATIC OPERATION.													
VEHICLE EFFECT-NONE.													
CORRECTIVE ACTION-UNKNOWN.													
P.U./LOADING-60C-A/B		FTA1323/P1-203-00-9		FRF		9B 561027		ETR		YES NO			
LOX MANOMETER MANOMETER													
FAILURE MODE-SHORT. DUE TO A LOX TANKING PROBLEM, THE MISSILE TANKED TO A 3.2 PCT. FUEL RICH CONDITION. UPON STEPPING TO SEQUENCE 3, THE EDO WENT EXTREMELY LOX RICH AND DURING ENGINE RUN, THE SERVO VALVE OPERATED AT THE CLOSED LIMIT DUE TO THE FALSE LOX RICH SIGNAL. POST TEST INVESTIGATION REVEALED THE LOX MANOMETER WOULD BREAK DOWN UNDER SEVERAL PRESSURE AND GIVE ERRONEOUS OUTPUT.													
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE MISSILE WAS TANKED TO A 3.2 PCT. FUEL RICH CONDITION.													
VEHICLE EFFECT-NONE.													
CORRECTIVE ACTION-REPLACE PU SET.													
P.U./LOADING-60C-A/B		2C-7-208/P3-204-00-4		FLIGHT		AD 560502		ETR		YES YES			
MANOMETER MANOMETER													
SYSTEM EFFECT-OPERATION TOO HIGH. PROPELLANT UTILIZATION SYSTEM INDICATED A MAXIMUM FUEL RICH ERROR THROUGHOUT THE TEST.													
VEHICLE EFFECT-NONE. THE PU SYSTEM WAS OPERATED OPEN LOOP THROUGHOUT THE TEST AND THE FUEL RICH INDICATION HAD NO EFFECT ON VEHICLE PERFORMANCE.													
CORRECTIVE ACTION-UNKNOWN.													
P.U./LOADING-60C-A/B		FTA2986/P2-102-00-16		FRF		18A 560522		12/ETR		YES NO			
MANOMETER MANOMETER													
FAILURE MODE-OUT OF TOLERANCE.													
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE PU SYSTEM GAVE A WEIGHT INDICATION APPROXIMATELY 4000 POUNDS HIGHER THAN THE LOAD CELLS.													

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE.							093310
CORRECTIVE ACTION-REPLACED PU MANOMETERS.							
P.U./LOADING-GDC-A/B MANOMETER	FTA2838/P2-101-00-16 MANOMETER	PNP	18A 380416	ETR	YES NO		093322
FAILURE MODE-OUT OF TOLERANCE. THE PU SYSTEM MANOMETERS GAVE HIGH WEIGHT READINGS FOR BOTH LOX AND FUEL. MATCHED SE T HAD ADDED TYPE MANOMETER TO PREVENT LOSS OF DIELECTRIC COATING WHICH WAS SUPPOSED TO CORRECT HIGH WEIGHT READINGS.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B MANOMETER	ZC-7-083/P4-102-00-13 MANOMETER	FLIGHT	13A 380207	ETR -8.79	YES NO		093318
FAILURE MODE-FAIL DURING OPERATION. THE LOX MANOMETER FAILED WHEN THE VEHICLE WAS SEQUENCED TO FLIGHT PRESSURIZATION.							
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. UNABLE TO DETERMINE LOX WEIGHT DURING FLIGHT.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B MANOMETER	FTA2319/P2-102-00-10 MANOMETER	PNP	10A 371127	ETR	YES NO		093315
FAILURE MODE-ERRATIC OPERATION. PU MANOMETERS WERE RANDOMLY OSCILLATING AND GAVE ERRONEOUS WEIGHT INDICATIONS.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B MANOMETER	FTA2289/P2-100-01-10 MANOMETER	COMPOSITE-FRD/DPL	10A 371115	ETR -4200	YES NO		
FAILURE MODE-LEAKAGE-EXTERNAL. FUEL LEAKS AT MANOMETER.							
SYSTEM EFFECT-NONE.							

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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-COMPOSITE DELAYED. 48 MINUTE HOLD. CORRECTIVE ACTION-REPAIRED LEAKS.							892379
P.U./LOADING-GDC-A/B MANOMETER	EN-496 1A-113-D8-02 MANOMETER	CAPTIVE	2A 371008	WTR	YES NO		892323
FAILURE MODE-FAILURE TO OPERATE AT PRESCRIBED TIME. NO OUTPUT WAS OBSERVED FROM THE FUEL SIDE OF THE PU MANOMETER. IT WAS NOT KNOWN WHETHER THE MALFUNCTION WAS A RESULT OF A FAULTY MANOMETER OR INSTRUMENTATION CIRCUIT. SYSTEM EFFECT-OPERATION DOES NOT START. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.-KCA							897241
P.U./LOADING-GDC-A/B MANOMETER	EN-537/1A,106-D4-02 MANOMETER	CAPTIVE	2A 370726	WTR	YES NO		898020
FAILURE MODE-DRIFT IN CALIBRATION. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. DID NOT INDICATE THE PROPER AMOUNT OF FUEL TANKED. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-RECALIBRATE MANOMETER.							898020
P.U./LOADING-GDC-A/B MANOMETER	EN-537 1-A, 103-D4-02 MANOMETER	CAPTIVE	2A 370723	WTR	NO NO		898020
FAILURE MODE-OUT OF TOLERANCE. THE FUEL MANOMETER OUTPUT DID NOT AGREE WITH THE LOAD CELL DATA. THIS WAS ATTRIBUTED TO A BAD CALIBRATION OF THE FUEL MANOMETER. AT A LOAD CELL READING OF 188 INCHES ABOVE STATION 1186, THE MANOMETER INDICATED 145 INCHES (EQUIVALENT TO 17,000 LBS LOW). SYSTEM EFFECT-OPERATION TOO LOW. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.							898020
P.U./LOADING-GDC-A/B MANOMETER	EN-548/1A-114-D3-02A MANOMETER	CAPTIVE	2A 370703	WTR	YES NO		898020
FAILURE MODE-ERRATIC OPERATION. POSSIBLE SHIFT IN MANOMETER OUTPUT FROM ITS ORIGINAL CALIBRATION.							898020

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	DATE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. RESULTED IN A 13000 LB DISCREPANCY IN TOTAL PROPELLANT TANKING BETWEEN LOAD CELL AND MANOMETER MEASUREMENTS.							090202
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-RECALIBRATION OF MANOMETER.							
P.U./LOADING-M-A/B MANOMETER	EN-433/106.0-4 MANOMETER	CAPTIVE	3A 570527	BYC	YES NO		096098
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. DIRECTLY AFTER THE TEST COMPLETION. THE CONTINUITY OF THE LOX MANO METER OUTPUT FAILED. THIS WAS PROBABLY DUE TO WATER SEEPING INTO THE MANOMETER WHILE DELUGING.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE MANOMETERS WERE REMOVED FOR INSPECTION AND CALIBRATION.							090273
P.U./LOADING-M-A/B LOADING PROBE	AI-4/AJ 01-3C3 PROBE	COMPOSITE-FRD/DPL	303D 860224	ADDRESS-1	NO NO		
FAILURE MODE-FAILED TO LOAD RATE AT PRE-THRESHOLD TIME. THE 100 PERCENT LOX PROBE FAILED TO ACTIVATE UPON METTING.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. SENT. LOX WAS TANKED TO THE OVERFILL PROBE.							
VEHICLE EFFECT-COMPOSITE WAS RECALIBRATED. THE COMMIT SEQUENCE WAS REINIT.							
CORRECTIVE ACTION-A POTENTIOMETER IN THE PLCU WAS ADJUSTED 1 OHM HIGHER.							090277
P.U./LOADING-M-A/B LOADING PROBE	990-1-44-012 PROBE; O RING	COMPOSITE-FRD/DPL	96D 860118	ADDRESS-2	YES NO		
FAILURE MODE-EXTERNAL LEAK. FUEL WAS LEAKING PART THE O RING SEAL OF THE 90 PERCENT FUEL PROBE INTO THE B-1 POD.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-COMPOSITE RESEQUENCED. THE MET DRESS REVERSAL HAD TO BE REINIT AFTER DECONTAMINATION OF THE B-1 POD.							
CORRECTIVE ACTION-THE PROBE WAS REPLACED.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DATA SOURCE PART NUMBER	VEHICLE DATE OF	SITE TIME OF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B LOADING PROBE	SLV-A9-20-3031 PROBE FUEL LEVEL/D-1110	FAR 89-43203-3	5308 651208	FACTORY	YES NO	CONVAIR 89-43203-3	890353
FAILURE MODE-EXTERNAL LEAK. THE 95 PERCENT FUEL LEVEL SENSOR LEAKED AT ALL TEST PRESSURES DUE TO A SEALING O-RING CRYSTAL INTO THE PROBE TUBE. THERE IS NO SUITABLE O-RING RETAINING GROOVE OR RETAINING MECHANISM INCORPORATED IN THE DESIGN TO PREVENT EXTRUSION. IT IS CONCLUDED THAT EXTRUSION WAS THE RESULT OF CONSTANT FUEL TANK PRESSURE WHILE THE UNIT WAS INSTALLED.							
CORRECTIVE ACTION-REDESIGN UNIT TO PROVIDE A POSITIVE O-RING RETAINING MECHANISM. (REF. PAR SLV-A9-20-3008) ALSO, A SURVEY-93-65A IS IN WORK TO X-RAY ALL EXISTING PROBES TO DETERMINE O-RING POSITION.							
P.U./LOADING-GDC-A/B LOADING PROBE	SLV-99-20-3039-P TRANSDUCER, FUEL LEVEL SUBASSEMBLY	FAR 89-43203-501	651111	FACTORY	GOC 89-43203-501		890347
FAILURE MODE-OUT OF SPECIFICATION. TRANSDUCER HAD A 22.5 OHM IMPEDANCE WHERE 19 OHMS IS MAXIMUM ALLOWABLE. INVESTIGATION REVEALED THE CRYSTAL MATERIAL HAD BEEN CHANGED FROM BARIUM TITANATE TO LEAD ZIRCONATE. SOME WERE MASS LOADED WITH EPOXY, AND SOME WERE COPPER COATED ON THE ENDS. CROSS SECTIONS OF THE CRYSTALS REVEALED CRACKS ORIGINATING AT THE SOLDER CONNECTIONS.							
CORRECTIVE ACTION-ALL TRANSDUCER ASSEMBLIES CONTAINING LEAD ZIRCONATE CRYSTALS WERE RETURNED TO ACOUSTICA ASSOC. WHERE LEAD ZIRCONATE CRYSTALS WILL REPLACE THOSE ON HAND AND ARE TO BE DESIGNATED P/N 27-04230-5. THESE WILL RECEIVE EXTENSIVE TESTING UNDER ECP3302. FINAL ACTION WILL BE TAKEN AFTER COMPLETION OF TESTING.							
P.U./LOADING-GDC-A/B LOADING PROBE	SLV-99-20-3039-P TRANSDUCER, FUEL LEVEL SUBASSEMBLY	FAR 89-43203-3	651026	FACTORY	NO	89-43203-3	890348
FAILURE MODE-OUT OF SPECIFICATION. THE 100 PERCENT LEVEL TRANSDUCER OF THE FUEL PROBE ASSEMBLY REGISTERED 25.4 OHMS DURING CHECKOUT (15.00 OHMS SPECIFIED MAXIMUM). INVESTIGATION DISCLOSED THE CRYSTAL MATERIAL HAD BEEN CHANGED FROM BARIUM TITANATE TO LEAD ZIRCONATE. SOME WERE MASS LOADED WITH EPOXY, AND SOME WERE COPPER COATED ON THE ENDS. CROSS SECTIONS OF THE CRYSTALS REVEALED CRACKS ORIGINATING AT THE SOLDER CONNECTIONS.							
CORRECTIVE ACTION-ALL TRANSDUCER ASSEMBLIES CONTAINING LEAD ZIRCONATE CRYSTALS WERE RETURNED TO ACOUSTICA ASSOC. WHERE LEAD ZIRCONATE CRYSTALS WILL REPLACE THOSE ON HAND AND ARE TO BE DESIGNATED P/N 27-04230-5. THESE WILL RECEIVE EXTENSIVE TESTING UNDER ECP3302. FINAL ACTION WILL BE TAKEN AFTER COMPLETION OF TESTING.							
P.U./LOADING-GDC-A/B LOADING PROBE	69F4111 FUEL LEVEL SENSOR	UTP-PET 27-04230-3	651025	60/C	YES NO	ACOUSTICA 100280-1	
FAILURE MODE-OUT OF SPECIFICATION. THE FREQUENCY AT RESONANCE (DRY) WAS 85.2 KC/S. THE REQUIREMENT IS THAT THE FREQUENCY AT RESONANCE BE BETWEEN 78 AND 98 KC/S. AN IMPEDANCE CHECK AT 20 DEG P WAS 177 OHMS, AT 60 DEG P WAS 32.8 OHMS							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
8. THE CRYSTAL MATERIAL WAS PUT IN PLACE OF THE ORIGINAL BARIUMTITANATE.							091213
CORRECTIVE ACTION-LOT 19 ON HOLD. A CLASS 1 ECP IS BEING PREPARED UNDER WAP M031609. A SURVEY WILL BE MADE TO RETURN ALL PZT TRANSDUCERS TO VENDOR. A NEW SPECIFICATION WILL BE CREATED FOR THE PZT CRYSTAL TRANSDUCERS AND ADDITIONAL DET TESTS WILL BE PERFORMED.							
P.U./LOADING-GDC-A/B LOADING PROBE	83-4MO-03-34 FUEL OVER-FILL SENSOR	COMPOSITE-FRD/DPL	34D 850930	WTR	YES NO		094646
FAILURE MODE-ERRATIC OPERATION. FUEL OVERFILL PROBE WAS ERRATIC. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. FUEL RAPID LOAD TERMINATED. VEHICLE EFFECT-PRECOUNTDOWN DELAYED. CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B LOADING PROBE	84-4MO-01-34 LOX SENSOR	COMPOSITE-FRD/DPL	34D 850909	WTR	YES NO		094931
FAILURE MODE-PREMATURE OPERATION. LOX 95 PCT BACKUP SENSOR ACTIVATED. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. TERMINATED LOX RAPID LOAD. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-PROBE JUMPERED OUT.							
P.U./LOADING-GDC-A/B LOADING PROBE	P88-LO-01-QAC8 PROBE	COUNTDOWN	151D 850810	ETR -2220	YES NO		099723
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LEVEL HIGH PROBE (OXYGEN) FAILED TO INDICATE LIQUID PRESENCE. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. SYSTEM FAILED TO INDICATE PRESENCE OF LIQUID AT THIS LEVEL. VEHICLE EFFECT-NONE. NO HOLD INITIATED. CORRECTIVE ACTION-NONE. THIS INFORMATION TAKEN FROM OBSERVER LOG.							
P.U./LOADING-GDC-A/B LOADING PROBE	A85-0021/P3-405-00-228 PROBE	COUNTDOWN	223D 850720	ETR -130	NO NO		
FAILURE MODE-OUT OF TOLERANCE. AT MINUS 2 MINUTES 10 SECONDS A LOX LEVEL REDLINE WAS CALLED BECAUSE THE 100 PCT LOX PROBE INDICATION HAD NOT BEEN RECEIVED AND LOX TOPPING COULD NOT BE SECURED.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
<p>SYSTEM EFFECT-OPERATION TOO LOW. ATTAINMENT OF LOZ LEVEL TO THE 100 PCT LOZ PROBE WAS NOT ACCOMPLISHED ON TIME. VEHICLE EFFECT-COUNTDOWN WAS DELAYED 24 SECONDS. CORRECTIVE ACTION-HELD COUNTDOWN MOMENTARILY IN ORDER TO COMPLETE LOZ TOPPING.</p>						
P.U./LOADING-GOC-A/B LOADING PROBE	FTA6567/P6-WD-01-DACB PROBE	COMPOSITE-FRD/DPL	1510 050713 0	CTR MINUS 11 0	NO NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. INDICATIONS OF PROBE FAILURE PLUS 2 CENTAUR TANK PROBES WAS ATTRIBUTED TO ABNORMAL CIRCUIT OPERATION AS RESULT OF LOSS OF TRANSFER ROOM AIR CONDITIONING. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. IMPROPER SIGNALS CAUSED FLICKERING OF STEP 111, PERMIT LIGHT ON ATLAS PREB SURTIZATION PANEL. VEHICLE EFFECT-COMPOSITE DELAYED 6 MIN HOLD. 190 SEC RECYCLE. CORRECTIVE ACTION-A SIGNAL WAS LOCKED INTO THE STEP 111 PERMIT CIRCUIT. CIRCUIT REMOVED ABOUT 14 JULY TO BECOME IN DEPENDENT OF PROBE FLICKER. FIRST EFFORT BY RAISING LOZ LEVEL FAILED.</p>						
P.U./LOADING-GOC-A/B LOADING PROBE	BI-4MO-02-183 SENSOR	COMPOSITE-FRD/DPL	183D 050527	WTR	NO NO	
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LOX LIQUID IN TRANSFER LINE SENSOR FAILED TO INDICATE A WET CONDITION. FAILURE DUE TO A BROKEN WIRE AT SENSOR LINE PLUG P7. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. LOZ LOAD STOPPED AND 28 VOC JUMPED INTO TRANSFER LINE LOGIC TO ENABLE LOZ DRAIN. VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED. CORRECTIVE ACTION-PLUG P7 REPAIRED.</p>						
P.U./LOADING-GOC-A/B LOADING PROBE	BLV-99-20-3031-P FUEL PROBE ASBY.	PAR 99-43203-3	99D519	FACTORY	YES 60/C NO	
<p>FAILURE MODE-STRUCTURAL. PROBE TUBE WALL COLLAPSED DURING 93 P916 EXTERNAL LEAK TEST. FAILURE WAS CONFIRMED BUT NO CAUSE DETERMINED. CORRECTIVE ACTION-PROPOSED ACTION CONSISTED OF EXPLORATORY PROOF TESTS, AND REVIEW OF FABRICATION AND INSPECTION PROCEDURES FOR THE TUBE ASSEMBLY.</p>						



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	LV-89-20-3043-F FUEL LEVEL SENSING PROBE, O-RING	FAR 55-43219-1	194D 050419	FACTORY	YES NO	YES 60/C
FAILURE MODE-EXTERNAL LEAK. FAILURE WAS CONFIRMED AS CAUSED BY FAULTY O-RING INSTALLATION.						
CORRECTIVE ACTION-MORE CARE TO BE EXERCISED IN FUTURE INSTALLATIONS.						
P.U./LOADING-GDC-A/B LOADING PROBE	B3-401-00-134 SENSOR	COUNTDOWN	154D 050312	WTR	YES NO	
FAILURE MODE-ERRATIC OPERATION. MOMENTARY INDICATION OF LOSS OF FUEL IN TRANSFER LINE.						
SYSTEM EFFECT-OPERATION STARTS TOO LATE. MOMENTARY LOSS OF LIQUID IN TRANSFER LINE CAUSED RAPID LOAD VALVE TO CLOSE AFTER IT HAD STARTED TO OPEN, THUS DELAYING FUEL RAPID LOAD START.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	B3-4MO-01-134 LIQUID IN FUEL TRANSFER LINE SENSOR	COMPOSITE-F4D/DPL	154D 050308	WTR	YES NO	
FAILURE MODE-ERRATIC OPERATION. MOMENTARY LOSS OF LIQUID IN FUEL TRANSFER LINE.						
SYSTEM EFFECT-OPERATION STARTS TOO LATE. MOMENTARY LOSS OF LIQUID IN TRANSFER LINE CAUSED RAPID LOAD VALVE TO CLOSE AFTER IT HAD STARTED TO OPEN THUS DELAYING FUEL RAPID LOAD START.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	69F2903 FUEL LEVEL SENSOR	UTR-PRT 27-04239-3	050308	60/C	YES NO	ACOUSTICA NO 100290-1
FAILURE MODE-OUT OF SPECIFICATION. DURING A TEMPERATURE TEST AT 38 DEG F, THE IMPEDANCE OF THE TRANSDUCER WAS 33 OHMS AT 120 KC. THIS WAS MEASURED WHILE DRY WITH THE LANDLINE SIMULATOR. PROCEDURE CALLS FOR THE IMPEDANCE TO BE GREATER THAN 35 OHMS FROM 90 KC TO 120 KC.						
CORRECTIVE ACTION-NONE. IMPEDANCE WAS WITHIN LIMITS AT TEMPERATURES ABOVE 40 DEG F. TEMPERATURES FOR ETR AND WTR INDICATE THAT TEMPERATURES BELOW 40 DEG F WILL NOT BE ENCOUNTERED.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-50C-A/B LOADING PROBE	B2-4MO-01-41 SENSOR	COMPOSITE-FRD/DPL	41D 890224	WTR	YES NO	894334
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FAILURE OF LOX 90 PERCENT PROBE TO PICK-UP AT PROPER TIME. POSSIBLY DUE TO OVER SENSITIVE LOX 90 PERCENT PROBE.						
SYSTEM EFFECT-OPERATION TOO LONG. EXPECTED RAPID LOAD TIME SHORT, AND FINE LOAD TIME LONG.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-50C-A/B LOADING PROBE	A3-4MO-01-301/ SENSOR	COMPOSITE-FRD/DPL	301-D 890217	WTR	YES NO	894335
FAILURE MODE-FAIL DURING OPERATION A LOX TANK OVERFILL INDICATION OCCURRED ONE MINUTE AFTER LOX DRAIN START.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-50C-A/B LOADING PROBE	SLV-9D-20-3048-F FUEL PROBE ASSEMBLY	FAR 89-43203-1	690189	WTR	YES 60/C NO	893481
FAILURE MODE-STRUCTURAL. FAILURE WAS CONFIRMED, AS CAUSED BY POOR BOND BETWEEN THE CRYSTAL AND CASE OF THE 100 PCT TRANSDUCER.						
CORRECTIVE ACTION-VENDOR REVISED BONDING PROCEDURE IN EFFORT TO IMPROVE BOND BETWEEN CRYSTAL AND TRANSDUCER CASE. 60 % REVISED RECEIVING INSPECTION IN ATTEMPT TO ISOLATE FAULTY UNITS.						
P.U./LOADING-50C-A/B LOADING PROBE	SLV-9D-20-3048-F FUEL PROBE ASSEMBLY	FAR 89-43203-1	7104 890120	WTR	YES 60/C NO 89-43203-1	894481
FAILURE MODE-FAIL DURING OPERATION. FUEL-LEVEL SYSTEM INDICATED THE FUEL TANK WAS OVERFILLED DURING DUAL-PROPELLANT LOADING.						
CORRECTIVE ACTION-FAILURE REPORTED WAS NOT CONFIRMED-FUEL PROBE OPERATED AS SPECIFIED. NO CORRECTIVE ACTION TAKEN.						
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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B LOADING PROBE	60/CZ2H63-003-DA1038-/L3-TWO-02-71 04 FUEL OVERFILL PROBE	COMPOSITE-FRD/DPL	7104 650108	WTR	YES NO		899880
FAILURE MODE-FAILURE DURING OPERATION. FUEL OVERFILL INDICATION WAS RECEIVED 34 SECONDS PRIOR TO LOZ RAPID LOAD STA RT. THE INDICATION IS BELIEVED DUE TO A SENSITIVE PROBE.							
SYSTEM EFFECT-ERRATIC OPERATION. FUEL LOAD HAD BEEN COMPLETED PRIOR TO THE PREMATURE PROBE INDICATION.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE FUEL LOADING PROBE ASSEMBLY WAS CHANGED WHEN THE VEHICLE WAS RECYCLED TO THE MAB.							
P.U./LOADING-GDC-A/B LOADING PROBE	60/CZ2H63-003-DA1038-/L3-TWO-01-71 04 FUEL OVERFILL PROBE	COMPOSITE-FRD/DPL	7104 650108	WTR	YES NO		899780
FAILURE MODE-FAILURE DURING OPERATION. FUEL OVERFILL INDICATION WAS RECEIVED 1 HR 1 MIN 23 SEC AFTER 100 PCT FUEL I INDICATION WAS RECEIVED.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE FUEL LOADING PROBE ASSEMBLY WAS CHANGED WHEN THE VEHICLE WAS RECYCLED TO THE MAB.							
P.U./LOADING-GDC-A/B LOADING PROBE	SLV-99-20-3039-F FUEL LEVEL TRANSDUCER	FAR 27-04238-1	7402 641217	FACTORY	YES ACOUSTICA NO 27-04238-1		894482
FAILURE MODE-CUT OF TOLERANCE. DURING A FUNCTIONAL TEST THE TRANSDUCER FAILED TO MEET THE MINIMUM IMPEDANCE REQUIRE MENT OF 35 OHMS AT A FREQUENCY OF 120 KILOCYCLES.							
CORRECTIVE ACTION-NONE. PROBLEM WAS DUE TO HUMAN ERROR. REPORTED FAILURE OF THE TRANSDUCER WAS NOT CONFIRMED.							
P.U./LOADING-GDC-A/B LOADING PROBE	AAG4-0059/P3-401-00-289 PROBE	COUNTDOWN	2890 641103	ETR -120	NO NO		861430
FAILURE MODE-OUT OF SPECIFICATION. THE LOZ 100 PERCENT LEVEL HAD NOT BEEN ATTAINED BY THE PRESCRIBED TIME.							
SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOZ ABOARD.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 11 MINUTE HOLD AND RECYCLE TO -7 MINUTES.							
CORRECTIVE ACTION-HOLD TO ATTAIN 100 PERCENT. LOZ LEVEL.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTM	VENDOR NAME VENDOR PART NO	
P.U./LOADING-60C-A/B LOADING PROBE	A864-0059/P3-401-00-268	COUNTDOWN	2690 641109	ETR -210	NO NO		991449
FAILURE MODE-OUT OF TOLERANCE OR EXPECTED VALUE. THE LOG 100 PERCENT LEVEL HAD NOT BEEN ATTAINED BY THE PRESCRIBED TIME.							
SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOG ABOARD.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 64 SECOND HOLD.							
CORRECTIVE ACTION-HOLD TO ATTAIN 100 PERCENT LOG LEVEL.							
P.U./LOADING-60C-A/B LOADING PROBE	A-99-20-3036-F FUEL LEVEL TRANSDUCER	FAR 27-04237-18	3030 641102	FACTORY	YES ACOUSTICA NO 100297-1		994494
FAILURE MODE-OUT OF TOLERANCE. DURING FUNCTIONAL TESTING ON FTR 36682, THE UNIT FAILED TO RESONATE BETWEEN 76 AND 89 KILOCYCLES, PER SPECIFICATION.							
CORRECTIVE ACTION-THE VENDOR, ACOUSTICA, REQUESTED TO IMPROVE ASSEMBLY OF FUEL-LEVEL TRANSDUCERS TO ELIMINATE IMPROPER BONDING OF CRYSTALS. VENDOR INSTITUTED ELECTRO-COPPER PLATING OVER SILVER TO INSURE PROPER ADHESIVE BOND. EFFECTIVE ON ALL UNITS SUBSEQUENT TO S/N 4034687.							
P.U./LOADING-60C-A/B LOADING PROBE	8LY-99-20-3035-F FUEL LEVEL TRANSDUCER	FAR 27-04238-1	641013	FACTORY	YES ACOUSTICA NO 27-04238-1		994495
FAILURE MODE-CONTAMINATION. LEAD TO OUT OF TOLERANCE, DURING TEMPERATURE TESTING, FREQUENCY SHIFTED BELOW 76 KILOCYCLES WHEN TEMPERATURE WAS DECREASED BELOW 32 DEGREES F. AND IMPEDANCE WENT ABOVE 15.0 OHMS WHEN TEMPERATURE WAS RAISED ABOVE 110 DEGREES F. EXAMINATION OF THE BCD DISCLOSED THE CRYSTAL WAS ONLY PARTIALLY BONDED TO THE CASE. STORAGE TEMPERATURES HAD BEEN LOWERED.							
CORRECTIVE ACTION-A REPLY FROM THE VENDOR, ACOUSTICA, TO A PAR WRITTEN ABOUT A PREVIOUS FAILURE STATES THAT, POOR EPOXY BOND BETWEEN SENSOR SHOUT AND CRYSTAL WAS DUE TO CONTAMINATION ON CRYSTAL SURFACE, RESULTING FROM ADHESIVE RESIDUE AND CLEANING PROCEDURE DURING ASSEMBLY. CORRECTIVE ACTION EFFECTIVE ON ALL SERIAL NUMBERS SUBSEQUENT TO 4030808. ALSO REINSTATED 160 DEGREES F STORAGE TEMPERATURE REQUIREMENT FROM 110 DEGREES F.							
P.U./LOADING-60C-A/B LOADING PROBE	69F8903-1 FUEL LEVEL SENSOR	UTP-PRT 27-04238-1	641006	60/C	YES 100290 NO		
FAILURE MODE-OUT OF SPECIFICATION. DURING TEMPERATURE TEST, THE RESONANT FREQUENCY SHIFTED TO LESS THAN 76 KC AT 32 DEG F. SPECIFICATION LIMITS ARE 76 KC TO 88 KC.							

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P.U./LOADING-GDC-A/B LOADING PROBE	LV-99-20-3029-F FUEL LEVEL TRANSDUCER	FAR 27-04237-15	195D 640902	FACTORY	YES ACOUSTICA NO 27-04237-15	891210
CORRECTIVE ACTION-NONE. OBTAIN ANOTHER SPECIMEN AND CONTINUE WITH TEST. THE UNIT UNDER TEST HAD BEEN RECEIVED PRIOR TO THE INITIATION OF CONTROLS AND WOULD NOT HAVE BEEN ACCEPTED IF THE PRESENT CONTROLS HAD BEEN IN EFFECT.						
FAILURE MODE-CONTAMINATION. DURING FUNCTIONAL TEST PER PROCEDURE 27-04237, PARAGRAPH 3.6.3.2.1 AN IMPEDANCE READING OF 50 OHMS WAS OBTAINED. SPECIFICATION LIMIT IS 16 OHMS.						
CORRECTIVE ACTION-FAR RECOMMENDED DESIGN INCLUDE A TEMPERATURE TEST, AT RECEIVING INSPECTION, TO DETECT UNITS HAVING POOR BONDS OR CONTAMINATION BETWEEN CRYSTAL AND TRANSDUCER CASE. VENDOR REQUESTED TO ELIMINATE IMPROPER BONDING OF CRYSTALS, CONTAMINATION PARTICLES FROM ADHESIVE. DESIGN SUBMITTED EOP SERVICE REQUEST, DATED 641006, REQUESTING PROCEDURE 27-03370 BE REVISED TO INCLUDE 100 DEGREES F TEMPERATURE TEST.						
P.U./LOADING-GDC-A/B LOADING PROBE	GDC/ZZH84-026-LA1019-LA-7HO-02-710 COMPOSITE-FRD/DPL 1 PRESSURE SWITCH		7101 640807	WTR	NO NO	890783
FAILURE MODE-PREATURE OPERATION. THE LIQUID IN TRANSFER LINE DIFFERENTIAL PRESSURE SWITCH PREMATURELY TERMINATED FUEL DRAIN. THE PROBLEM WAS CAUSED BY A FAULTY BLEED OF THE SWITCH.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-THE SWITCH WAS REPLACED.						
P.U./LOADING-GDC-A/B LOADING PROBE	GDC/ZZH84-026-LA1019-LA-7HO-02-710 COMPOSITE-FRD/DPL 01 PROBE		7101 640807	WTR	YES NO	890784
FAILURE MODE-FAIL DURING OPERATION. DURING FUEL DRAIN THE 95 PERCENT PRIMARY FUEL PROBE FAILED DRY.						
SYSTEM EFFECT-NONE. SATISFACTORY OPERATION DUE TO PROPER OPERATION BY THE BACK-UP PROBE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE RAPID LOAD TIMER WAS ADJUSTED TO BACK UP THE 95 PERCENT BACK UP PROBE.						
P.U./LOADING-GDC-A/B LOADING PROBE	A-99-20-3080-C FUEL LEVEL TRANSDUCER	FAR 27-04237-15	640903	FACTORY	YES ACOUSTICA NO 100290	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FAILURE OF SUBJECT TRANSDUCER WAS DISCOVERED DURING SPECIAL TESTS REQUIRED BY ECP 6413, WHICH PROVIDES FOR TESTING OF ALL E AND F SERIES FUEL PROBES AND FUEL-LEVEL TRANSDUCERS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP TIME	SITE DIP TIME	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-NONE. NEW ENGINEERING SPECIFYING THE REQUIREMENTS THESE FUEL-LEVEL TRANSDUCERS FAILED TO MEET, CO NSTITUTES CORRECTIVE ACTION ALREADY TAKEN AS A RESULT OF THIS INVESTIGATION. THIS ANALYSIS IS CANCELED.						
P.U./LOADING-GOC-A/B LOADING PROBE	GOC/ZZH84-083-DA1010-/LA-7MO-01-71 COMPOSITE-FRD/DPL DI PROBE	7101 840724	WTR	YES NO		
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE FUEL 95 PERCENT PRIMARY PROBE DID NOT ACTIVATE UNTIL LOX RAPID LOAD START. IT DE-ACTIVATED AT INITIATION OF FUEL DRAIN.						
SYSTEM EFFECT-NONE. FUEL LOAD 95 PERCENT WAS VERIFIED BY THE 95 PERCENT BACK-UP PROBE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-THE FUEL 95 PERCENT PRIMARY PROBE WAS REPLACED.						
P.U./LOADING-GOC-A/B LOADING PROBE	SLV-90-20-3024-F FUEL PROBE ASSEMBLY	FAR 89-43203-1	840724 WTR	YES 60/C NO 89-43203-1		
FAILURE MODE-ERRATIC OPERATION. DURING PROCEDURE 27-9444: THE 95-PERCENT FUEL SENSOR FAILED DRY. APPROXIMATELY 30 M INUTES AFTER THE FAILURE, IT SWITCHED TO A NORMAL WET INDICATION AS THE TANK WAS CHANGED TO FLIGHT PRESSURE.						
CORRECTIVE ACTION-NONE. A SUCCESSFUL TANKING AND LAUNCHING OF THE MISSILE WAS ACCOMPLISHED SO THE PROBE COULD NOT B E OBTAINED FOR ANALYSIS. THEREFORE, NO CORRECTIVE ACTION COULD BE RECOMMENDED.						
P.U./LOADING-GOC-A/B LOADING PROBE	LV-A9-20-3014-F LIQUID OXYGEN LEVEL TRANSDUCER	FAR 27-43185-817	333D 840823	FACTORY NO 27-43185-817	YES 60/C	
FAILURE MODE-OUT OF TOLERANCE. DURING EOP 330.843, THE RESISTANCE OF PINS B-C AND A-C WAS 13.0 OHMS. ALLOWABLE RESI STANCE READINGS ARE BETWEEN 7.0 AND 10.0 OHMS.						
CORRECTIVE ACTION-NONE. THE CAUSE OF THE FAILURE WAS NOT FOUND, THEREFORE, NO MEANINGFUL CORRECTIVE ACTION COULD BE TAKEN.						
P.U./LOADING-GOC-A/B LOADING PROBE	A1-4MO-08-243 SENSOR	COMPOSITE-FRD/DPL 840811	243D 840811	WTR	YES NO	
FAILURE MODE-PREATURE OPERATION. THE LOX OVERFILL SENSOR ACTIVATED SEVERAL TIMES BETWEEN LOX DRAIN START AND THE O PENING OF DRAIN VALVE L88.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE.							006693
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B LOADING PROBE	LV-99-20-3006F FUEL-PROBE ASSEMBLY	FAR 27-72269-815	2880 840322	FACTORY	YES NO	60/C 27-72269-815	004500
FAILURE MODE-OUT OF TOLERANCE. DURING IMPEDANCE TESTING AT RESONANT FREQUENCY PER EOP 330.343, IMPEDANCE OF SENSOR 4 COULD NOT BE READ AND IMPEDANCE OF SENSOR 1 EXCEEDED ALLOWABLE.							
CORRECTIVE ACTION-FAR RECOMMENDED A SAMPLE LOT OF RECENTLY ACQUIRED TRANSDUCERS BE SUBMITTED TO TEMPERATURE TESTING . RESPONSIBLE DESIGN GROUP SUBMITTED EOP SERVICE REQUEST, DATED 841006 REQUESTING PROCEDURE 27-03570 BE REVISED TO 1 INCLUDE 100 DEGREES F TEMPERATURE TEST.							
P.U./LOADING-GDC-A/B LOADING PROBE	LV-99-20-3005-C FUEL-PROBE ASSEMBLY	FAR 27-72269-815	840321	FACTORY	YES NO	60/C 27-72269-815	004501
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. DURING IMPEDANCE TESTING AT RESONANT FREQUENCY PER EOP 330.343, SENSOR NUMBER 4 DID NOT GIVE AN INDICATION. FAILURE NOT CONFIRMED. HARDWARE WAS NOT RECEIVED.							
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION TAKEN.							
P.U./LOADING-GDC-A/B LOADING PROBE	A-95-20-259F FUEL PROBE ASSY.	FAR 27-72453-807	840219	FACTORY	YES NO	60/C	003482
FAILURE MODE-OUT OF TOLERANCE. UNIT FAILED IN FACTORY TEST. FAILURE WAS CONFIRMED BUT NO CAUSE DETERMINED. IT WAS CONSIDERED THAT THE FAILURE WAS CAUSED BY TEMPERATURE OF 100 DEGREES F.							
CORRECTIVE ACTION-EOP PROCEDURES WERE CHANGES TO INCLUDE 100F DEGREES TEMP. TEST.							
P.U./LOADING-GDC-A/B LOADING PROBE	99-2818 VALVE, CONSTANT FLOW	UTP-QUAL/PPT 27-04314-3	840208	60/C		SARGENT ENGR. 1520CA-SM	
FAILURE MODE-OUT OF SPECIFICATION. AFTER 132 HOURS OF A 300 HOUR LIFE TEST AND WITH HELIUM FLOW AT 900 PSIG INLET PRESSURE AND 40 PSIG OUTLET PRESSURE, THE FLOW RATE HAD INCREASED TO 5.58 SCFH. MAXIMUM ALLOWABLE IS 4.5 SCFH.							
CORRECTIVE ACTION-STOP ALL EFFORTS TO QUALIFY THIS VENDOR. TERMINATE TEST AND PREPARE REPORT. ALL PARTS WILL BE OBT							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
Aimed from qualified vendor, Leonard.						
P.U./LOADING-GDC-A/B LOADING PROBE	89-2918 VALVE, CONSTANT FLOW	UTP-8/JAL/PPT 87-04314-3	840204	60/C	YES NO	SARGENT ENGR 1320CA-3N
FAILURE MODE-OUT OF SPECIFICATION. THE FLOW CHECKS WERE CONDUCTED AS A PROOF CYCLE. THE RATES WERE LESS THAN THE MINIMUM OF 3.5 SCFH. THE READINGS VARIED FROM 3.4 TO 2.8 SCFH. SIMILAR LOW READINGS HAD ALSO BEEN RECORDED ON FEBRUARY 1 AND 3. THE RANGE OF THESE READINGS WAS 3.4 TO 3.3.						
CORRECTIVE ACTION-NONE. CONTINUE TEST.						
P.U./LOADING-GDC-A/B LOADING PROBE	AA64-0008/P2-401-00-199 PROBE	COUNTDOWN	199D 840130	ETR -13500	NO NO	
FAILURE MODE-FAILED DURING OPERATION. ERRONEOUS OVERFILL INDICATION FROM FUEL OVER FILL PROBE DUE TO A GROUND AMPLIFIER DELAY FAILURE.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL WHICH ERRONEOUSLY INDICATED THE FUEL TANK WAS OVERFILLED.						
VEHICLE EFFECT-COUNTDOWN WAS DELAYED 25 MINUTES AT T-155 DUE TO LOWERING THE FUEL LEVEL AND RETOPPING TO VERIFY THAT THE PROBE INDICATION WAS NOT CAUSED BY AN EXCESS OF FUEL.						
CORRECTIVE ACTION-AFTER SATISFACTORY FUEL LEVEL WAS VERIFIED NO ACTION WAS TAKEN UNTIL AFTER THE LAUNCH WHEN THE CAUSE WAS FOUND AND CORRECTED.						
P.U./LOADING-GDC-A/B LOADING PROBE	A-93-20-294-F FUEL-LEVEL TRANSDUCER	FAR 87-04237-13	840180	FACTORY	YES NO	ACOUSTICA 100287
FAILURE MODE-STRUCTURAL. UNIT FAILED FACTORY TEST. FAILURE WAS CONFIRMED AS CAUSED BY SEPARATION OF MECHANICAL BOND BETWEEN THE CRYSTAL AND TRANSDUCER CASE.						
CORRECTIVE ACTION-VENDOR WAS REQUESTED TO REVIEW INSPECTION PROCEDURES. VENDOR REQUESTED 60/C TO REVIEW HANDLING PROCEDURES FOR FUELER.						
P.U./LOADING-GDC-A/B LOADING PROBE	89-2918 VALVE, CONSTANT FLOW	UTP-8/JAL/PPT 87-04314-3	840114	60/C	YES NO	SARGENT ENGR 1320CA-3N
FAILURE MODE-OUT OF SPECIFICATION. THE FLOW RATES WAS EXCESSIVE AFTER BEING INSTALLED IN THE VIBRATION TEST FIXTURE. A READING OF 17.5 SCFH WAS OBTAINED COMPARED TO THE MAXIMUM ALLOWABLE OF 4.5 SCFH.						



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-VIBRATION TEST FIXTURE PROBLEM. MODIFY TEST FIXTURE TO PERMIT PROPER ATTACHMENT OF SPECIMEN WITHOUT DAMAGE TO THE FLOW SETTING. REPLACE SPECIMEN AND RESUME TESTING.						
P.U./LOADING-60C-A/B LOADING PROBE	A-99-20-286-C FUEL-LEVEL TRANSDUCER	FAR 87-04238-1	031512	FACTORY	119	ACOUSTICA
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THREE UNITS FAILED TO PASS SURVEY TEST UNDER TCP 1230. THREE ADDITIONAL FAILURES ON FAR A-99-20-286-C. FOUR ADDITIONAL PER LV-99-20-289-C.						
CORRECTIVE ACTION-NONE. ANALYSIS WAS CANCELED BASED ON PRIOR CORRECTIVE ACTION UNDER TCP 1230.						
P.U./LOADING-60C-A/B LOADING PROBE	D4994/L3-4HO-01-227 FUEL LOADING PROBE	COMPOSITE-FRD/DPL 227-D	WTR 031511	NO NO		
FAILURE MODE-PREATURE OPERATION. PREMATURE FUEL DRAIN COMPLETE RECEIVED SHORTLY AFTER FUEL DRAIN START. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. EARLY DEACTIVATION OF THE 90 PERCENT FUEL PROBE CAUSED THE BOIL-OFF VALVE TO CLOSE AND THE PCU TO PHASE TO STANDBY OPERATION.						
VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAYED OR RESCHEDULED. BOIL-OFF VALVE CLOSED TOO SOON-STOPPING FUEL DRAIN. BOIL-OFF VALVE WAS OPERATED MANUALLY WHICH CAUSED BOIL-OFF VALVE CONTROL RELAY K2 FAILURE.						
CORRECTIVE ACTION-RELAY K2 REPLACED. REASON FOR PROBE FAILURE UNKNOWN.						
P.U./LOADING-60C-A/B LOADING PROBE	LV-99-20-281 F FUEL-PROBE ASSY	FAR 87-72269-033	031113	WTR	YES NO	60/C
FAILURE MODE-STRUCTURAL. UNIT WAS REJECTED FOR INDICATING VALVE WHEN IT WAS DRY. FAILURE CONFIRMED AS CAUSED BY BONDING SEPARATION OF CRYSTAL FROM JUNCTION CASE.						
CORRECTIVE ACTION-VENDOR PROBE FOR BONDING WAS REVISED TO CORRECT PROBLEM.						
P.U./LOADING-60C-A/B LOADING PROBE	69-2918 VALVE/CONSTANT FLOW	UTP-EQUAL/PPY 87-0431-13	031103	60/C	YES NO	SARGENT ENGR. NO. 1520CA-3N
FAILURE MODE-OUT OF SPECIFICATION. THE LIFE TEST HAD JUST STARTED (9.75 HOURS) WHEN THE FLOW RATE WAS FOUND TO BE 0.26 CFM. THE UPPER TOLERANCE IS 0.075 CFM.						
CORRECTIVE ACTION-STOP TEST. RETURN SPECIMEN TO VENDOR FOR DESIGN ANALYSIS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B LOADING PROBE	SP-99-20-270-P FUEL-LEVEL TRANSDUCER	FAR 27-04236-1	031016	FACTORY	YES	ACOUSTICA NO 100290	003400
FAILURE MODE-OUT OF TOLERANCE OR SPECIFICATION. UNIT WAS REJECTED IN FACTORY. FAILURE WAS CONFIRMED AS CAUSED BY BR OKEN BOND BETWEEN THE BARIUM TITANATE CRYSTAL AND THE CASE.							
CORRECTIVE ACTION-VENDOR PROCESS PROCEDURE FOR BONDING WAS AMENDED TO CORRECT PROBLEM.							
P.U./LOADING-GDC-A/B LOADING PROBE	A-30-20-278-P FUEL-PROBE ASSY.	FAR 27-72269-927	2320 031011	WTR	YES	GD/C NO	003400
FAILURE MODE-CONTAMINATION. FAILURE CONFIRMED AS CAUSED BY INTERNAL CONTAMINATION.							
CORRECTIVE ACTION-VENDOR WAS REQUESTED TO REVIEW HIS ASSEMBLY PROCEDURES TO PRECLUDE ALL POSSIBLE CONTAMINATION DUE ING BUILD UP.							
P.U./LOADING-GDC-A/B LOADING PROBE	A1-4MO-02-252 SENSOR	COUNTDOWN 27-80731-889	2320 031009	WTR	YES	NO	003373
FAILURE MODE-ERRATIC OPERATION. THE LOS 100 PCT PROBE ACTIVATED PRIOR TO THE LOS 90 PCT PROBE. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. VEHICLE EFFECT-COUNTDOWN ABORTED WHEN LOS LOAD STOPPED PREMATURELY. CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B LOADING PROBE	A1-4MO-01-232 SENSOR	COUNTDOWN 27-80731-889	2320 031008	WTR	YES	NO	003372
FAILURE MODE-ERRATIC OPERATION. THE LOS 100 PCT PROBE ACTIVATED PRIOR TO THE LOS .90 PCT PROBE. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. VEHICLE EFFECT-COUNTDOWN ABORTED. WHEN THE LOS LOAD SEQUENCE WAS STOPPED PREMATURELY. CORRECTIVE ACTION-UNKNOWN.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VL DOOR PART NO	
P.U./LOADING-60C-A/B LOADING PROBE	27A2950 PLUG ASSY-ELECT. LOZ TANK FLOOR	UTP-PET 27-04993-1	631008	60/C	YES ON MARK COUPLI NO NCS 7066	992738	
FAILURE MODE-OUT OF SPECIFICATION. 3/4 301-0372 PIN NO. 2 FAILED RETENTION TEST BY MOVED 1/8 INCH INWARD AT 9 POUND B. SPECIFICATION REQUIREMENT 10 POUNDS.							
CORRECTIVE ACTION-NONE. CLASSIFIED AS HUMAN ERROR. DURING DISASSEMBLY AND REASSEMBLY.							
P.U./LOADING-60C-A/B LOADING PROBE	A63-0035/P3-4BN-03-197 PROBE	COMPOSITE-PRS/DPL	1970	ETR	NO NO	994411	
FAILURE MODE-OUT OF TOLERANCE. APPROXIMATELY 1200LBS OF LOZ WERE TANKED ABOVE THE 130 PCY PROBE. FAILURE WAS ATTRIB UTED TO BURNED OUT BULB IN TANKING CONSOLE AGE EQUIPMENT FAILURE. SYSTEM EFFECT-OPERATION TOO HIGH. VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-NONE. BULB WAS REPLACED IN AGE CONSOLE.							
P.U./LOADING-60C-A/B LOADING PROBE	63-0076/C1-501-00-70 SENSOR	COUNTDOWN	702	WTR	YES NO	994942	
FAILURE MODE-PREMATURITY OPERATION. LOZ SLUG DELIVERY DID NOT OCCUR DURING THE COMMIT SEQUENCE. MISSILE NEVER RECEIVED D LOZ SLUG DUE TO NET FAILURE OF 100 PERCENT LOZ PROBE. SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-60C-A/B LOADING PROBE	8P-99-20-291-C FUEL-LEVEL TRANSDUCER	PAR 27-04239-1	630724	FACTORY	YES ACOUSTICA NO 27-04239-2	993491	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THIRTEEN UNITS FAILED TO PASS SPECIAL TEST SURVEY CONDUCTED UNDER TCP 1230. THREE ADDITIONAL UNITS FAILED IDENTICALLY AS REPORTED ON PAR 8P-99-20-273-C. THREE IDENTICAL FAILURES PER PAR LV-99-20-293-C. ONE ADDITIONAL FAILURE REPORTED ON PAR LV-99-20-293-C.							
CORRECTIVE ACTION-NONE. ANALYSIS WAS CANCELED BASED ON PRIOR CORRECTIVE ACTION UNDER TCP 1230.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIS DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITP TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B LOADING PROBE	A-99-20-252-C FUEL-LEVEL TRANSDUCER	FAR 27-04237-7	633723	FACTORY	YES	ACQUSTICA NO 27-04237-7	993490
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. SIX UNITS FAILED TO PASS SPECIAL SURVEY TEST CONDUCTED UNDER TCP 1 230. THREE ADDITIONAL FAILURES RECORDED ON FAR LV-99-20-287-C. TWO ADDITIONAL PER A-99-20-293-C.							
CORRECTIVE ACTION-NONE. ANALYSIS WAS CANCELED BASED ON PRIOR CORRECTIVE ACTION UNDER TCP 1250.							
P.U./LOADING-GDC-A/B LOADING PROBE	22H63-021/DAB43/LR-4MO-01-139 PROBE	COMPOSITE-FRD/DPL	1390	WTR	NO	NO	997811
FAILURE MODE-ERRATIC OPERATION.90 PERCENT FUEL PROBE DROPPED OUT MOMENTARILY AFTER 93 PERCENT FUEL PROBE HAD ACTIVATED.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B LOADING PROBE	/A3-4MO-01-198 SENSOR	COMPOSITE-FRD/DPL	1980	WTR	YES	NO	996907
FAILURE MODE-PREATURE OPERATION. THE LOS OVERFILL PROBE OPERATED PREMATURELY.							
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. ACTIVATION OF OVERFILL PROBE PRIOR TO 100 PCT PROBE CAUSED A COMMIT STOP							
VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B LOADING PROBE	22H63-003/DAB28 PROBE	COUNTDOWN	1190	WTR	NO	NO	997806
FAILURE MODE-ERRATIC OPERATION 95 PERCENT FUEL PROBE DROPPED OUT INTERMITTENTLY FOLLOWING FUEL LOAD COMPLETE.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							

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SYSTEM SUO-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	AD83-0087/DA823/L2-4HO-08-119 PROBE	COMPOSITE-FRD/DPL	1190 830504	WTR	NO NO	997839
FAILURE MODE-ERRATIC OPERATION. 95 PERCENT FUEL PROBE DROPPED OUT INTERMITTENTLY FOLLOWING FUEL LOAD COMPLETE.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	AD83-0087/DA823/L2-4HO-08-119 PROBE	COMPOSITE-FRD/DPL	1190 830504	WTR	NO NO	997809
FAILURE MODE-90 PERCENT AND 95 PERCENT FUEL PROBES MOMENTARILY DROPPED OUT AT COMMIT STOP.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	DA916/L4-4HO-01-137 LOX 99.5 PCT. PROBE	COMPOSITE-FRD/DPL	1570 830426	WTR	YES NO	997297
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LOX 99.5 PCT. PROBE FAILED MET.						
SYSTEM EFFECT-OPERATION DOES NOT START. TOPPING CYCLE WAS PERFORMED MANUALLY.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-GDC-A/B LOADING PROBE	DA18/01-901-00-83 FUEL 95 PERCENT PROBE	COUNTDOWN	83E 830424	OUTP-1	NO NO	997848
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. FUEL 95 PERCENT PROBE DID NOT INDICATE MET UNTIL 9.8 SECONDS PRI OR TO THE 100 PERCENT PROBE.						
SYSTEM EFFECT-OPERATION STARTS TO LATE. FUEL RAPID LOAD CONTINUED BEYOND 95 PERCENT PROBE COVER.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B LOADING PROBE	DA918/01-301-00-83 FUEL 93 PCT. PROBE	COUNTDOWN	85E 830424	0817-1	NO YES		898299
FAILURE MODE-OUT OF TOLERANCE. FUEL 93 PCT. BACKUP PROBE DID NOT INDICATE MET UNTIL THE FUEL TANK WAS SEQUENCED TO FLIGHT PRESSURE.							
SYSTEM EFFECT-OPERATION STARTS TOO LATE. FUEL RAPID LOAD CONTINUED BEYOND 95 PERCENT BACKUP PROBE COVERY.							
VEHICLE EFFECT-COUNTDOWN DELAYED.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B LOADING PROBE	SF-99-20-221-C FUEL PROBE ASSY	FAR 27-72269-021	630419	FACTORY	YES NO		892707
FAILURE MODE-ERRATIC OPERATION. IMPROPER WIRING OF SENSORS BY VENDOR.							
CORRECTIVE ACTION-REJECTED AT RECEIVING INSPECTION. THE FUEL PROBE FAILED TO MEET THE NEW RECEIVING INSPECTION REQUIREMENTS, SPECIFIED BY ECP 8413.							
P.U./LOADING-GDC-A/B LOADING PROBE	A-99-20-217-F FUEL LEVEL TRANSDUCER	FAR 27-04239-1	630226	FACTORY	YES NO	ACCOUSTICA	893475
FAILURE MODE-STRUCTURAL. THE TRANSDUCER SHOWED NO IMPEDANCE AT 80 KILOCYTES THE ONLY IMPEDANCE DIP WAS AT 180 KILOCY CLES. AN INDICATION THAT CRYSTAL HAS BROKEN LOOSE FROM CASE. TEARDOWN SHOWED HALF OF SURFACE WAS NOT BONDED.							
CORRECTIVE ACTION-ACCOUSTICA PROCESS BULLETIN EPB 18-9, AMENDED 8/21/82 AND 9 CHROMATE SOLUTION COATING TO NON-ANODI ZED CASE SURFACE TO IMPROVE ADHESION.							
P.U./LOADING-GDC-A/B LOADING PROBE	SF-90-20-214-F FUEL PROBE ASSY	FAR 27-72269-019	1490 830213	WTR	YES NO	60/C	893476
FAILURE MODE-STRUCTURAL. ELEMENT REPEATEDLY SWITCHED FROM MET TO DRY TO MET INDICATION UNDER KNOWN DRY PROBE CONDIT ION. A PARTIALLY LOOSE CRYSTAL TO CASE BOND WAS FOUND. ALSO INTERNAL WIRING TO SENSORS BY VENDOR WAS IMPROPER. ALL F OUR TRANSDUCERS FAILED TO MEET NEW RECEIVING INSPECTION REQUIREMENTS.							
CORRECTIVE ACTION-VENDOR IMPROVED CRYSTAL BONDING BY COATING NON-ANODIZED CASE SURFACE WITH CHROMATE SOLUTION. THE TCP 1230 STUDY SHOWED THAT IMPROPER SENSOR WIRING BY VENDOR WAS THE MAJOR CAUSE OF FUEL PROBE FAILURES. NEW TEST EQU IPMENT WILL DETECT IMPROPERLY WIRED SENSORS. ECP 8413 SURVEY COVERED CATEGORY II MISSILES. FAR AP-90-20-3827 REQUEST ED SIMILAR SURVEY FOR ALL D-SERIES MISSILES, RESULTING IN SURVEY 80-83, INITIATED 7/22/83.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	DA883/01-308-00-64 PROBE	COUNTDOWN	84E 321218	OSTFI	YES NO	897365
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. 100 PCT PRIMARY FUEL PROBE FAILED DRY.						
SYSTEM EFFECT-PARTIAL LOSS OF REDUNDANCY. FUEL FINE LOAD TERMINATED BY THE 100 PCT SECONDARY PROBE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	DA854/A3-4MO-02-181 FUEL SENSOR	COMPOSITE-FRD/DPL	161D 821208	WTR	YES NO	898714
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE 97 PERCENT FUEL SENSOR DID NOT ACTIVATE.						
SYSTEM EFFECT-NONE. RAPID FUEL LOAD WAS TERMINATED BY THE 97 PERCENT BACKUP SENSOR.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	A-9B-02-034F FUEL PROBE O-RING	FAR 27-72885	21F 821130	ETR	YES NO	898313
FAILURE MODE-LEAK-EXTERNAL-FUEL LEAKAGE PAST FLANGE CAUSED BY A NECK DOWN OF 0.008 INCH OF THE WELD AREA OF THE TOR USUAL O-RING. NOMINAL DIAMETER BEFORE IT IS COMPRESSED IS 0.125 INCH. LEAK RATE WAS 1 DROP IN TEN MINUTES.						
CORRECTIVE ACTION-NOT CONFIRMED BY TESTING, BUT AN EXAMINATION SUBSTANTIATED THAT THE FAILURE COULD HAVE OCCURRED PA ST THE DEFECTIVE SEAL. VCAR 1737-82 OF 8/17/82 FROM ADVANCED PRODUCTS CO. STATED THAT ALL DASH NUMBERS OF 88-87900 A RE NOW INSPECTED 100 PCT TO ASSURE THAT THE WELD SECTION DOES NOT GET BELOW 0.125 INCH. GO/A STANDARD ENGINEERING AN D PURCHASING HAVE DISCUSSED THE PROBLEM TO ASSURE THAT THE PROPER PART IS CALLED OUT FOR ANY APPLICATION AND THAT SP ECIFICATION FOR SUCH PARTS ARE UNDERSTOOD AND ACCEPTED BY BOTH VENDOR AND GO/A. THIS IS EFFECTIVE 1/8/82.						
P.U./LOADING-GDC-A/B LOADING PROBE	A-9B-02-034F FUEL PROBE FLANGE	FAR 27-72885	21F 821130	ETR	YES YES	
FAILURE MODE-EXTERNAL LEAKAGE. FUEL LEAKAGE PAST THE PROBE FLANGE DUE TO THE NECKDOWN OF THE 83-87900-033 TOR USUAL WHERE TORUSAL IS WELDED. NECK DOWN HAS .008 INCH, NOMINAL O-RING DIAMETER BEFORE USE IS 0.125 INCH.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI VENDOR NAME	OTH VENDOR PART NO	
							095326
	CORRECTIVE ACTION-FAILURE NOT CONFIRMED BY FUNCTIONAL TESTING, BUT EXAMINATION OF THE RING SUBSTANTIATED THAT LEAKAGE COULD OCCUR PAST THE DEFECTIVE O-RING. A SIMILAR FAILURE WAS REPORTED BY FAR A-88-20-118 WITH RAR A-88-20-827 OF 13/7/63 REQUESTING THAT VENDOR REVIEW WELDING TECHNIQUES. 1. VCAR 1757-62 OF 17/8/62 FROM VENDOR STATED THAT ALL DASH NUMBERS OF 63-87900-XXX ARE NOW INSPECTED 100 PCT TO ASSURE ADEQUATE WELD CROSS SECTION OF NOT LESS THAN 0.125 INCH. 2. G/C STD. ENGINEERING AND PURCHASING HAVE ASSURED THAT THE PROPER PART WILL BE USED FOR ANY APPLICATION AND THAT SPECS ARE UNDERSTOOD AND ACCEPTED BY BOTH G/C AND VENDOR, EFFECTIVE 1/8/62.						
P.U./LOADING-GOC-A/B LOADING PROBE	SP-98-02-059F FUEL PROBE O-RING	FAR 27-72269-815	2150 821012	ETR	YES NO		095316
	FAILURE MODE-LEAK-EXTERNAL-FUEL LEAKAGE PAST FLANGE OF PROBE. CAUSE WAS DETERMINED TO BE A NECK DOWN OF 0.009 INCH OF THE WELD AREA CROSS SECTIONAL OF THE TORUSEAL O-RING. NOMINAL DIAMETER BEFORE IT IS COMPRESSED IS 0.125 INCH.						
	CORRECTIVE ACTION-NOT CONFIRMED BY FUNCTIONAL TESTING. EXAMINATION DID SUBSTANTIATE THE FAILURE. 1. VCAR 1757-62 DATED 8/17/62 FROM ADVANCED PRODUCTS, STATES THAT ALL PARTS ARE BEING INSPECTED 100 PCT TO ASSURE THAT THE CROSS SECTIONAL DIAMETER AT THE WELD AREA DOES NOT GET BELOW 0.1212 INCH. 2. THE DIMENSIONAL PROBLEM IS NOW BEING DISCUSSED WITH G/A STANDARDS ENGINEERING AND PURCHASING TO ASSURE THAT PROPER CONFIGURATION IS CALLED OUT FOR A GIVEN APPLICATION AND THAT SPECIFICATIONS FOR SUCH PARTS ARE UNDERSTOOD AND ACCEPTED BY BOTH VENDOR AND G/A. EFFECTIVE 8/1/62.						
P.U./LOADING-GOC-A/B LOADING PROBE	SP-98-02-059F FUEL PROBE FLANGE	FAR 27-72269-815	2150 821012	ETR	YES NO		095466
	FAILURE MODE-EXTERNAL LEAKAGE OCCURRED PAST THE PROBE FLANGE DUE TO NECK DOWN OF THE 63-87900-055 TORUSEAL IN THE WELD AREA. NECK DOWN WAS UP TO 0.009 FROM THE ADJACENT AREA. NOMINAL O-RING DIAMETER BEFORE USE IS 0.125 INCH.						
	CORRECTIVE ACTION-FAILURE-NOT CONFIRMED BY TESTING BUT EXAMINATION SUBSTANTIATED THE FAILURE. (RAR A-88-20-827 OF 10/7/62 (PARA-88-20-110) REQUESTED THAT THE VENDOR REVIEW WELD TECHNIQUES (BASED ON A SIMILAR FAILURE). WITH A MECA DASH). VCAR 1757-62 OF 17/8/62 FROM ADVANCED PRODUCTS STATED THAT ALL DASH NUMBERS OF 63-87900 ARE NOW INSPECTED 100 PERCENT TO ASSURE WELD CROSS SECTION DOES NOT GET BELOW 0.1215 INCH. G/C STANDARDS ENGINEERING AND PURCHASING HAVE DISCUSSED THE PROBLEM TO ASSURE THE PROPER PART IS CALLED OUT FOR ANY APPLICATION AND THAT SPECIFICATION FOR SUCH PARTS ARE UNDERSTOOD AND ACCEPTED BY BOTH G/A AND VENDOR, EFFECTIVE 1/8/62.						
P.U./LOADING-GOC-A/B LOADING PROBE	JA-20-206-F FUEL PROBE ASSY	FAR 27-72269-827	2240 821012	FAC	YES G/C NO		093470
	FAILURE MODE-STRUCTURAL. THE OUTPUT READING WAS 238 MILLIVOLTS. THE REQUIREMENT IS 450 MILLIVOLTS. SILVER PLATING ON BOMBED SIDE OF CRYSTAL APPEARED TO BE LOOSE. THIS IS THE ONLY KNOWN FAILURE OF THIS TYPE TO DATE.						
	CORRECTIVE ACTION-THIS FAILURE INCLUDED IN STUDY INITIATED BY TCP 1230, 7/14/62.						



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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SWJ-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME DIF	SITE DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-6DC-A/B LOADING PROBE	DA800/01-SHO-13-64 SENSOR	COMPOSITE-FRU/DPL	045 620825	031C-1	NO	60/C NO
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. 100 PCT. PRIMARY FUEL PROBE FLICKERED AND FAILED DRY.</p> <p>SYSTEM EFFECT-PARTIAL LOSS OF REDUNDANCY.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN</p>						
P.U./LOADING-6DC-A/B LOADING PROBE	AA81-0137/P2-403-00-111 SOLENOID	COUNTDOWN	111D 620801	12 -900	NO NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOX COULD NOT BE TANKED DUE TO LOX TRANSFER UNIT SOLENOID FAILURE.</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START. FAILED SOLENOID IN LOX TRANSFER UNIT MADE IT IMPOSSIBLE TO TANK VEHICLE.</p> <p>VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. LOX WAS DETANKED TO PERMIT REPAIR WORK ON LMSC PROBLEM AND COULD NOT BE RETANKED.</p> <p>CORRECTIVE ACTION-SOLENOID REPLACE BY REMOVED SOLENOID.</p>						
P.U./LOADING-6DC-A/B LOADING PROBE	AR141-B-1-124/JC-400-04-124 SOLENOID VALVE	COMPOSITE-FACTORY	124D 620824	FACTORY		
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME TELEMETRY MEASUREMENT P3280 (SUSTAINER MAIN FUEL VALVE) AND P3250 (SUSTAINER MAIN LOX VALVE) INDICATED THAT THE SUSTAINER FUEL AND LOX VALVES FAILED TO OPEN WHEN PNEUMATIC PRESSURE WAS DROPPED.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED. A COMPOSITE RETEST WAS ACCOMPLISHED TO VERIFY THE INTEGRITY OF THE P/U SYSTEM.</p> <p>CORRECTIVE ACTION-NONE-NUMEROUS RETESTS WERE PERFORMED, BUT THE PROBLEMS COULD NOT BE DUPLICATED.</p>						
P.U./LOADING-6DC-A/B LOADING PROBE	AE62-0533/B3-401-00-187 99.8 PCT. LO2 PROBE	COUNTDOWN	127D 620811	WTR	YES NO	
<p>FAILURE MODE-PREATURE OPERATION. 99.8 PERCENT PROBE ACTIVATED PREMATURELY.</p> <p>SYSTEM EFFECT-OPERATION STOPS PREMATURELY. LO2 LOAD STOPPED PRIOR TO LOAD COMPLETE.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED.</p>						

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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DATA SOURCE	VEHICLE DATE	TIME	SITE	PRI	OTH	VENDOR NAME	VENDOR PART NO
310-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE	DIF	TIME	DIF	OTH		
CORRECTIVE ACTION-99.6 PERCENT PROBE WIRING CONNECTED TO ACOUSTICA 100 PERCENT PROBE.									
P.U./LOADING-GDC-A/B	AA82-0060/P6-404-00-F1	FLIGHT	104D	36A	YES				895162
LOADING PROBE			820421	-810	NO				891394
FAILURE MODE-OUT OF TOLERANCE. INSUFFICIENT LOX ABOARD. SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOX ABOARD. VEHICLE EFFECT-COUNTDOWN DELAYED. 6 MINUTE HOLD TO COMPLETE LOX TOPPING. CORRECTIVE ACTION-HOLD TO COMPLETE LOX TOPPING.									
P.U./LOADING-GDC-A/B	AD82-0045/DA899	COMPOSITE-PRD/DPL	118D	PALCI-1	YES				896432
LOADING PROBE	SENSOR		820418		NO				
FAILURE MODE-FAIL DURING OPERATION. FUEL 99.3 PCT AND 99 PCT PROBES DROPPED OUT INTERMITTENTLY AFTER FUEL LOADING WAS COMPLETED. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.									
P.U./LOADING-GDC-A/B	DA88/D1-6MO-03-12	COMPOSITE-PRD/DPL	12F	WTR	YES				896352
LOADING PROBE	LOX 95 PCT SENSOR		820328		NO				
FAILURE MODE-ERRATIC OPERATION. INTERMITTENT OPERATION OF LOX 95 PCT. PROBES BELIEVED CAUSED BY SLOW RISE RATE OF LOX (LW2) COUPLED BY BLOWING AT THE SURFACE. SYSTEM EFFECT-OPERATION TOO LONG LOX RAPID LOADED 16 MINUTES WITHOUT BEING COMPLETED. VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED. CORRECTIVE ACTION-UNKNOWN.									
P.U./LOADING-GDC-A/B	DA88/D1-6MO-03-12	COMPOSITE-PRD/DPL	12F	WTR	NO				896304
LOADING PROBE	FILTER		820328		NO				
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. EXCESSIVE LOX (LW2) RAPID LOAD TIME CAUSED BY ICE IN THE STORAGE TANK WHICH RESULTED IN THE MAIN LINE FILTER FREEZING OVER. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. LOX LOAD NOT COMPLETED. VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED. CORRECTIVE ACTION-LINE DUMPED FROM LOX STORAGE TANKS AFTER TEST.									

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PRI	VENDOR NAME
810-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE DIF	TIME DIF	OTH	VENDOR PART NO
P.U./LOADING-60C-A/B	D4881/D1-8NO-01-12	COMPOSITE-FRD/DPL	12F	WTR	NO	
LOADING PROBE	FILTER		620319		NO	
998303						
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FROZEN MAINLINE FILTER CAUSED EXCESSIVE LOX RAPID LOAD TIME (LINE L OADED DURING THIS TEST).						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-60C-A/B	D4881/D1-8NO-01-12	COMPOSITE-FRD/DPL	12F	WTR	NO	
LOADING PROBE	SENSOR		620319		NO	
998302						
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LOX TOPPING VALVE (L-30) FAILED TO OPEN WHEN THE 95 PCT. LOX PRO BE ACTIVATED. VALVE WAS FOUND TO BE FROZEN SHUT. (LINE LOADED DURING THIS TEST).						
SYSTEM EFFECT-OPERATION DOES NOT START. NO TOPPING INITIATED DUE TO OCCURRENCE OF OTHER LOX LOADING PROBLEMS.						
VEHICLE EFFECT-COMPOSITE ABORTED AND RESCHEDULED.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-60C-A/B	D4875 02-6NO-19-03	COMPOSITE-FRD/DPL	3F	03TF-2	YES	
LOADING PROBE	99.25 PERCENT LOX PROBE		620226		NO	
998351						
FAILURE MODE-PREATURE OPERATION. 99.25 PCT PROBE ACTIVATED MOMENTARILY DURING CHILLDOWN.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-NONE						
CORRECTIVE ACTION-NONE						
P.U./LOADING-60C-A/B	D4859	COMPOSITE-FRD/DPL	61E	06TF1	NO	
LOADING PROBE			611822		NO	
998306						
FAILURE MODE-CONTAMINATION. TOPPING FLOW RATES WERE LOW DUE TO PIECES OF THE FLOW METER BLOCKING THE TOPPING LINE.						
SYSTEM EFFECT-OPERATION TOO LONG.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-TOPPING LINE FLOWMETER WAS REPLACED AND THE LINE CLEANED.						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	AD81-0349/D1650/L2-4HO-01-114 LOADING SENSOR	COMPOSITE-FRD/DPL	114D 811216	WTR	YES NO	897361
FAILURE MODE-ERRATIC OPERATION. INTERMITTENT ACTIVATION OF 100 PERCENT PROBE AND A AND B SECTIONS OF OVER-FILL PROBE UNTIL JUST PRIOR TO FLIGHT PRESSURIZATION.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	DAB39/F1-3MO-18-24 FUEL 100 PERCENT SENSOR	COMPOSITE-FRD/DPL	24E 811201	03TF-1	YES NO	897393
FAILURE MODE-FAIL DURING OPERATION. FUEL 100 PCT PROBE FAILED DRY AFTER 1.2 SECONDS OF OPERATION. ADDITIONAL FINE LOAD TIME WAS UNSUCCESSFUL IN AN ATTEMPT TO RECEIVE A NET INDICATION.						
SYSTEM EFFECT-OPERATION TOO LONG. FUEL 100 PCT PRIMARY PROBE PICKED UP MOMENTARILY. FUEL FINE LOAD TIME WAS EXCESSIVE.						
VEHICLE EFFECT-COUNTDOWN DELAYED. PERSONNEL WERE SENT TO THE LBS TO SIMULATE FUEL COMPLETE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	DAB39/F1-3MO-18-24 FUEL 100 PERCENT SENSOR	COMPOSITE-FRD/DPL	24E 811201	03TF-1	YES NO	897376
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FUEL 100 PCT SECONDARY PROBE FAILED TO PICK UP.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. FUEL 100 PCT SECONDARY FAILED TO PICKUP AFTER 100 PCT PRIMARY FAILED.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	DAB39/F1-3MO-18-24 FUEL 99 PERCENT SENSOR	COMPOSITE-FRD/DPL	24E 811201	03TF-1	YES NO	896780
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FUEL 99 PERCENT. PRIMARY PROBE FAILED TO PICKUP.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. FUEL RAPID LOAD WAS TERMINATED BY THE RAPID LOAD TIMER.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-PERSONNEL WERE SENT TO LBS TO SIMULATE FUEL COMPLETE.						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP TIME	SITE DIP TIME	PRI DIP OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GOC-A/B LOADING PROBE	DA637/01-SHO-18-24 FUEL 95 PERCENT SENSOR	COMPOSITE-FRD/DPL	24E 611201	DSIF-1	YES NO		993779
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FUEL 95 PERCENT. SECONDARY PROBE FAILED TO PICKUP.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED.</p> <p>CORRECTIVE ACTION-PERSONNEL WERE SENT TO LBB TO SIMULATE FUEL COMPLETE.</p>							
P.U./LOADING-GOC-A/B LOADING PROBE	DA637/01-SHO-18-24 FUEL 100 PERCENT SENSOR.	COMPOSITE-FRD/DPL	24E 61120	WTR	YES NO		993779
<p>FAILURE MODE-FAIL DURING OPERATION. FUEL 100 PERCENT PRIMARY SENSOR INDICATION WAS LOST.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. FINE LOADING WAS TERMINATED BY CLOSING GROUND FILL AND DRAIN VALVE.</p> <p>CORRECTIVE ACTION-PERSONNEL WERE SENT TO LBB TO FAIL PROBE MET.</p>							
P.U./LOADING-GOC-A/B LOADING PROBE	DA637/01-SHO-18-24 SENSOR	COMPOSITE-FRD/DPL	24E 61120	WTR	YES NO		993779
<p>FAILURE MODE-FAIL DURING OPERATION. AFTER SHOWING MET FOR 1.7 SECONDS THE PROBE FAILED DRY.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. RAPID LOAD WAS STOPPED BY THE RAPID LOAD TIMER.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED.</p> <p>CORRECTIVE ACTION-PERSONNEL WERE SENT TO LBB TO FAIL THE SENSOR MET.</p>							
P.U./LOADING-GOC-A/B LOADING PROBE	DA637/01-SHO-18-24 SENSOR	COMPOSITE-FRD/DPL	24E 61120	F	YES NO		993779
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE 95 PCT. PRIMARY INDICATION WAS NOT PICKED UP.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. RAPID LOAD WAS STOPPED BY RAPID LOAD TIMER.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. PERSONNEL WERE SENT TO THE LBB TO FAIL THE SENSORS MET.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>							

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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	AA61-0152/P8-404-00-117	COUNTDOWN	1170 611118	ETR -300	YES NO	993931
FAILURE MODE-OUT OF TOLERANCE-LOZ LEVEL TOO HIGH.						
SYSTEM EFFECT-OPERATION TOO HIGH-LOZ LEVEL TOO HIGH.						
VEHICLE EFFECT-COUNTDOWN DELAYED-18 MINUTES.						
CORRECTIVE ACTION-DRAIN SMALL AMOUNT OF LOZ. LOZ TANK PRESSURE HAD TO BE INCREASED TO DAMPEN OSCILLATIONS ON GILMORE WEIGHT DIGITAL READOUT FOR PROPER LOZ LEVEL DETERMINATION.						
P.U./LOADING-GDC-A/B LOADING PROBE	RA-98-20-085-F FUEL PROBE INSTALLATION	FAR 27-72569-815	1170 611020	ETR	YES NO	60/C NO
FAILURE MODE-LEAK-EXTERNAL. UNIT WAS REJECTED FOR LEAKAGE DISCOVERED AFTER LAUNCH ABORT. FAILURE WAS CONFIRMED AS CAUSED BY LOOSENED TRANSDUCER RETAINING NUT.						
CORRECTIVE ACTION-NONE. ANALYSIS COULD NOT DETERMINE WHEN OR HOW THE RETAINING NUT BECAME LOOSENED.						
P.U./LOADING-GDC-A/B LOADING PROBE	DA805/LE-4MO-01-105 FUEL LOADING SENSORS	COMPOSITE-FRD/DPL	1050 611006	WTR	YES NO	993344
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. 99.3 PCT AND OVERFILL PROBES FAILED TO INDICATE NET.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-COMPOSITE DELAYED. TERMINAL FUEL FINE LOAD REQUIRED ADDITIONAL TIME.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	AD61-0293/DA987/01-9MO-04-24 SENSOR	COMPOSITE-FRD/DPL	24E 610922	0817-1	YES NO	993993
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOZ PLUS CONTROL NUMBER ONE PROBE FAILED AT INITIATION OF EJECTION.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						

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DIFFICULTIES REVIEW-PROPULSANT UTIL/LANDING SYSTEM--AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP D. TA SOURCE PART NUMBER	VEHICLE DATE DIP	DATE TIME	PR1 OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	DAS82 FUEL SENSOR	CC-POSITIVE-FRD/DPL	101D 610617	WTR	YES NO	094926
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE 95 PCT PROBE LOADED BEFORE THE 90 PCT.</p> <p>SYSTEM EFFECT-OPERATION TOO LONG. FUEL RAPID LOAD RAN BEYOND CONVERTING OF THE 90 PCT PROBE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-GDC-A/B LOADING PROBE	AA61-0137/P2-403-00-111 VALVE	COUNTDOWN	111D 610801	ETR -5640	NO NO	091446
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOW TANKING COULD NOT BE ACCOMPLISHED DUE TO FAILURE OF VALVE LA1 IN THE LOX TRANSFER UNIT.</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START. LOW TANKING COULD NOT BE ACCOMPLISHED.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED.</p> <p>CORRECTIVE ACTION-VALVE WAS REPLACED.</p>						
P.U./LOADING-GDC-A/B LOADING PROBE	AA61-0081/P3-501-00-22 LOX 95 PERCENT SENSOR	COUNTDOWN	22E 610706	ETP	YES NO	093747
<p>FAILURE MODE-PREMATURE OPERATION. DURING TANKING FOR LAUNCH, THE LOX 95 PERCENT SENSOR SENT A NET INDICATION PREMATURELY. ATTRIBUTED TO OVER SENSITIVITY OF THE SENSOR.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. FAULTY INDICATION THAT THE LOX 95 PCT. LEVEL HAD BEEN REACHED.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED 5 MINUTES TO COMPLETE LOW TANKING.</p> <p>CORRECTIVE ACTION-OVERSENSITIVITY OF THE SENSOR PARTIALLY OVERCOME BY INCREASING TANK PRESSURE FROM 3 TO 6 PSIG. LOW TANKING COMPLETED SATISFACTORILY.</p>						
P.U./LOADING-GDC-A/B LOADING PROBE	AA61-0073/P1-503-00-17 FUEL 95 PERCENT PROBE PRIMARY	COUNTDOWN	17E 610622	ETR	YES NO	
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE 95 PERCENT FUEL PRIMARY PROBE FAILED DURING THE LAUNCH COUNTDOWN.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-NONE.</p>						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-NONE. FUEL LOADING WAS APPARENTLY COMPLETED USING 95 PCT FUEL SECONDARY PROBE WHICH WAS OPERATING INTERMITTENTLY.						093737
P.U./LOADING-GOC-A/B LOADING PROBE	AA61-0073/P1-503-00-17 FUEL 95 PERCENT PROBE SECONDARY	COUNTDOWN	17E 810822	ETR	YES NO		093736
FAILURE MODE-ERRATIC OPERATION. THE 95 PERCENT SECONDARY FUEL PROBE SHOWED INTERMITTENT OPERATION DURING TANKING FOR FLIGHT. SIMILAR OPERATION WAS OBSERVED ON AN EARLIER FUEL-ONLY TANKING TEST.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE. FUEL LOADING WAS APPARENTLY COMPLETED SATISFACTORILY IN SPITE OF THE INTERMITTENT OPERATION. THE PRIMARY 95 PERCENT FUEL PROBE HAD FAILED.							
P.U./LOADING-GOC-A/B LOADING PROBE	98-08-071 LOX TOPPING PROBE, DISCONNECT.	FAR 27-21509-11	12E 810321	ETR	YES NO	YES CONVAIR	093196
FAILURE MODE-CONTAMINATION-PROBE WAS CORRODED INTERNALLY AND EXTERNALLY DUE TO EXPOSURE TO THE ELEMENTS FOR TWO HRS. MATERIAL WAS 8024 ALUMINUM ALLOY AND PARTIALLY HARD COATED. FAILURE DUE TO INADEQUATE MATERIAL FINISH.							
CORRECTIVE ACTION-CIC 98281 COVERED CHANGE TO 8081 ALUMINUM AND ALL SURFACES HARDCOATED PER AHS 2468.							
P.U./LOADING-GOC-A/B LOADING PROBE	DA473-B2-4MO-03-95 PROBE	COMPOSITE-FRD/DPL	93D 810317	5768-2	YES NO		097382
FAILURE MODE-PREATURE OPERATION. 100.2 PCT FUEL PROBE ACTIVATED AT RAPID LOAD START PLUS 28 SECONDS.							
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. FUEL LOAD STOPPED.							
VEHICLE EFFECT-COUNTDOWN ABORTED.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GOC-A/B LOADING PROBE	DA413C1-1MO-03-11 SENSOR	COMPOSITE-FRD/DPL	11E 810331	878C	YES NO	YES 60/C	
FAILURE MODE-PREATURE OPERATION. FUEL 95PCT BACKUP PROBE FAILED NET AT COUNTDOWN START.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.							
VEHICLE EFFECT-COMPOSITE ABORTED.							



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-UNKNOWN.							000314
P.U./LOADING-60C-A/B LOADING PROBE	AE61-0838/P3-501-00-18 VALVE-PROPELLANT UTILIZATION	FLIGHT	10C 610326	ETR 311.38	YES NO		000123
FAILURE MODE-OUT OF TOLERANCE. THE PROPELLANT UTILIZATION (PU) VALVE OPENED AT LOX PORT UNCOVERING. SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY-FUEL WAS DEPLETED PREMATURELY DUE TO THE PU VALVE OPENING FULLY INSTEAD OF CLOSING FULLY AT LOX PORT UNCOVERING. VEHICLE EFFECT-PREMATURE SUSTAINER ENGINE SHUTDOWN. THE SUSTAINER ENGINE COULD HAVE BURNED 2 SECONDS LONGER HAD THE PU VALVE REMAINED IN THE PROPER POSITION. CORRECTIVE ACTION-UNKNOWN.							007815
P.U./LOADING-60C-A/B LOADING PROBE	DA408C1-5NO-01-11 SENSOR	COMPOSITE-PRD/DPL	11E 610323	578C	YES NO		000122
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE 100 PERCENT FUEL PROBE FAILED DRY. THE 100 PERCENT FUEL INDICATION WAS NOT RECEIVED AFTER 90 SECONDS OF FINE LOADING WHICH HAD STARTED AT FUEL 95 PERCENT. SYSTEM EFFECT-OPERATION TOO LONG. VEHICLE EFFECT-COUNTDOWN ABORTED. CORRECTIVE ACTION-UNKNOWN.							000122
P.U./LOADING-60C-A/B LOADING PROBE	AE60-0937/P3-502-00-13 PROPELLANT UTILIZATION VALVE	FLIGHT	11C 610315	ETR 251.35	YES NO		000122
FAILURE MODE-ERRATIC OPERATION-SUSTAINER MAIN FUEL (PU) VALVE REMAINED IN FULL OPEN POSITION DURING ENTIRE FLIGHT. PROBABLY DUE TO A MECHANICAL FAILURE OF THE PU AUTOCONTROL VALVE. SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. FUEL WAS USED AT AN ABNORMALLY HIGH RATE DUE TO FAILURE OF THE PU VALVE TO LEAVE THE FULL OPEN POSITION. VEHICLE EFFECT-PREMATURE SUSTAINER ENGINE SHUTDOWN- THE SUSTAINER ENGINE SHUT DOWN PREMATURELY AT 251.35 SECONDS DUE TO FUEL DEPLETION. CORRECTIVE ACTION-IMPROVED CHECKOUT PROCEDURES. INSTRUMENTATION WAS ADDED TO MONITOR PU VALVE HYDRAULIC CONTROL CLOSING PRESSURE AND SERVO VALVE CURRENT.							000122

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PR1 OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B LOADING PROBE	EM-1739/L2-401-00-97 93PCT LOX PROBE	FRF	970 610309	PALC-2-3	YES NO		992616
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. CONVAIR 93PCT LOX PROBE FAILED DURING DETANKING.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-PROBE REPLACED.							
P.U./LOADING-GDC-A/B LOADING PROBE	DA369/L2-7MO-01-97 LOX OVERFILL PROBE	COMPOSITE-FRD/DPL	970 610229	PALC1-2	NO YES		997519
FAILURE MODE-PREATURE OPERATION. LOX OVERFILL PROBE FAILED WET DURING DPL.							
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. PREVENTED CONTINUATION OF LOX FUEL LOAD AND TOPPING SEQUENCES.							
VEHICLE EFFECT-DPL COMPOSITE DELAY.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B LOADING PROBE	DA293/B3-4MO-01-99 PROPELLANT PROBE	COMPOSITE-FRD/DPL	99D 601212	WTR	YES NO		996501
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. PROBE FAILED TO ACTIVATE AND TERMINATE PROPELLANT LOADING.							
SYSTEM EFFECT-OPERATION TOO LONG. PROBE FAILED TO TERMINATE RAPID AND FINE LOADING SEQUENCES.							
VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B LOADING PROBE	DA299/B3-4BN-01-99 FUEL PROBE	COMPOSITE-FRD/DPL	99D 601210	WTR	YES NO		993603
FAILURE MODE-FAIL DURING OPERATION. BAD 90 PERCENT PROBE AND CAPTIVE COUPLING BETWEEN THE 90 PERCENT AND 93 PERCENT INDICATING CIRCUITRY.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. FUEL LOAD CONTROL FAILURE INDICATION RECEIVED.							
VEHICLE EFFECT-COUNTDOWN DELAYED.							
CORRECTIVE ACTION-TVA INITIATED GROUNDING ALL EXTRANEOUS SIGNALS IN THE RETURN WIRING TO THE PLCU.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-6DC-A/B LOADING PROBE	DA239/B3-4BN-01-99 LOX UPPER LINE SENSOR	COMPOSITE-FRD/DPL	99D 601810	WTR	YES NO		893599
<p>FAILURE MODE-PREATURE OPERATION. AN INDICATION THAT LOX WAS PRESENT IN THE LOX UPPER LINE WAS RECEIVED AT THE BEGINNING OF THE AUTOMATIC LOX DRAIN EVEN THOUGH NO LOX HAD BEEN LOADED.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. FUEL DRAIN CYCLE COULD NOT BE STARTED DUE TO THE LOX INDICATED.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED.</p> <p>CORRECTIVE ACTION-LOX UPPER LINE SENSOR WAS REPLACED.</p>							
P.U./LOADING-6DC-A/B LOADING PROBE	AA80-0158/P2-4MO-01-91 DUCTING	COMPOSITE-FRD/DPL	91D 601207	ETR -2100	NO NO		893241
<p>FAILURE MODE-OUT OF SPECIFICATION. LOX WAS NOT REACHING THE TANK THROUGH THE SIX INCH LINE DURING LOX TANKING OPERATIONS.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. LOX WAS NOT REACHING LOX TANK DUE TO A FROZEN VALVE IN THE LIQUID OXYGEN HEAT EXCHANGER.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED AT T-35 FOR 25 MINUTES.</p> <p>CORRECTIVE ACTION-WATER WAS APPLIED TO THE EXTERIOR OF THE VALVE AFTER REMOVING SOME OF THE INSULATION AND THE VALVE ACTION WAS FREED.</p>							
P.U./LOADING-6DC-A/B LOADING PROBE	AA80-0134/P2-40E-00-83 RUPTURE DISC	COUNTDOWN	83D 601114	ETR -420	NO NO		897639
<p>FAILURE MODE-OUT OF TOLERANCE. LOX TANKING DELAYED DUE TO BLOWN RUPTURE DISCS IN GROUND 2 INCH TOPPING LINE AND GROUND 6 INCH TRANSFER LINE.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. AFTER RUPTURE DISCS WERE BLOWN, LOX COULD NOT BE TANKED.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. LOX DETANKED AND RETANKED. TOTAL HOLD TIME WAS 151 MINUTES WITH A RECYCLE BACK TO T-70. NOT ALL OF THIS HOLD TIME IS ATTRIBUTABLE TO THIS ONE PROBLEM.</p> <p>CORRECTIVE ACTION-RUPTURE DISCS IN GROUND LINES REPLACED.</p>							
P.U./LOADING-6DC-A/B LOADING PROBE	AA80-0134/P2-40E-00-83 INLET VALVE	COUNTDOWN	83D 601114	ETR -860	NO NO		
<p>FAILURE MODE-FAIL DURING OPERATION. LOX TANKING DELAYED DUE TO FROZEN INLET VALVE IN LOX TRANSFER UNIT.</p> <p>SYSTEM EFFECT-OPERATION TOO LOW. SATISFACTORY LOX LEVEL NOT ATTAINED.</p>							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VEHICLE PART NO
VEHICLE EFFECT-COUNTDOWN DELAYED. EXTENDED A HOLD 3 MINUTES WHICH WAS STARTED FOR ANOTHER REASON.						
CORRECTIVE ACTION-VALVE REPORTED OPEN AFTER 6 MINUTES.						
P.U./LOADING-60C-A/B LOADING PROBE	A460-0143/P2-402-00-83 PUMP	COUNTDOWN	83D 601114	ETR -420	NO NO	
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. PROPER LOX LEVEL COULD NOT BE ATTAINED DUE TO LOW OUTPUT OF PUMP LC.						
SYSTEM EFFECT-OPERATION TOO LOW. PROPER LOX LEVEL COULD NOT BE ATTAINED. MISSILE WAS LAUNCHED WITH 600 LB LOX SHORTAGE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-GO AS IS.						
P.U./LOADING-60C-A/B LOADING PROBE	A460-0324/COCP2-401-00-330 RUPTURE DISC	COUNTDOWN	55D 601022	ETR -1860	NO NO	
FAILURE MODE-FAIL DURING OPERATION. LOX TANKING COULD NOT BE ACCOMPLISHED DUE TO A RUPTURE LOX STORAGE TANK DISC.						
SYSTEM EFFECT-OPERATION DOES NOT START. LOX TANKING COULD NOT BE ACCOMPLISHED.						
VEHICLE EFFECT-COUNTDOWN DELAYED 15 MINUTES.						
CORRECTIVE ACTION-REPLACED DISC.						
P.U./LOADING-60C-A/B LOADING PROBE	A460-0118/P1-402-00-71 PUMP	COUNTDOWN	71D 601012	ETR -980	NO NO	
FAILURE MODE-OUT OF TOLERANCE. LOX SUBCOOLED TOPPING COULD NOT BE ACCOMPLISHED DUE TO INOPERATIVE PUMP LC.						
SYSTEM EFFECT-OPERATION TOO LOW. LOX SUBCOOLED TOPPING COULD NOT BE ACCOMPLISHED.						
VEHICLE EFFECT-COUNTDOWN DELAYED FOR 120 MINUTES. LOX WAS DETANKED TO INVESTIGATE THE PROBLEM.						
CORRECTIVE ACTION-PUMP LC REPAIRED. THE WRONG PLUG HAD BEEN INADVERTENTLY INSERTED INTO THE LC PUMP POWER RECEPTACLE AT THE LOX STORAGE AREA.						
P.U./LOADING-60C-A/B LOADING PROBE	AC-60-0036/81-502-A1-08 LOX TANK 100 PCT PROBE	CAPTIVE	BE 600930	9YC NO	NO NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- PROBE DID NOT TERMINATE LOX SLUG TRANSFER DUE TO RELAY FAILURE.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-OPERATION TOO LONG-BLUG TRANSFER UNIT LOW LEVEL (40 GALLON) PROBE TERMINATED BLUG TRANSFER.						
VEHICLE EFFECT-TEST ABORTED.						
CORRECTIVE ACTION-BLUG TRANSFER CONTROL PANEL WAS REPLACED.						
P.U./LOADING-GDC-A/B LOADING PROBE	DA243 LOX 95 PERCENT PROBE	COMPOSITE-FRD/DPL	570 600928	PALCI-1	YES NO	
FAILURE MODE-FAIL DURING OPERATION. LOX 95 PCT. PROBE FAILED NET DURING LOX DRAIN.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-PROBE REPLACED.						
P.U./LOADING-GDC-A/B LOADING PROBE	AD60-0059/DA234/B3-48W-01-47 LO2 OVER FILL SENSOR	COMPOSITE-FRD/DPL	470 600907	WTR	YES NO	
FAILURE MODE-PREATURE OPERATION. DURING LO2 RAPID LOAD A MOMENTARY OVERFILL INDICATION WAS RECEIVED WHICH CLOSED THE LO2 FINE LOAD VALVE. LO2 DRAIN WAS THEN INITIATED.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-LO2 WAS DRAINED AND REINITIATED WITH NO CORRECTIVE ACTION TAKEN. LO2 LOAD WAS SUCCESSFULLY COMPLETED. AFTER THE TEST THE LO2 OVERFILL PROBE WAS REPLACED.						
P.U./LOADING-GDC-A/B LOADING PROBE	AD60-0053/DA231/B3-48W-01-47 LO2 OVERFILL SENSOR	COMPOSITE-FRD/DPL	470 600902	WTR	YES NO	
FAILURE MODE-PREATURE OPERATION. DURING LO2 CHILLDOWN THREE ERRONEOUS LO2 OVERFILL INDICATIONS WERE MOMENTARILY RECEIVED.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-CHILLDOWN WAS TERMINATED AND LO2 DRAINED. CHILLDOWN WAS RESTARTED WITH NO SPURIOUS OVERFILL SIGNALS. THE PROBLEM WAS BELIEVED DUE TO AN OVERLY SENSITIVE OVERFILL PROBE.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	AD80-0051/D4228/LI-402-00-37 TANK	FRP	37D 600819	ETR	YES NO	993030
FAILURE MODE-FAIL DURING OPERATION. LOX 99.5 PERCENT FULL SIGNAL DROPPED OUT DURING COMMIT SEQUENCE WHEN FLIGHT PRE BURIZATION WAS REACHED. CAUSE ATTRIBUTED TO LOX LEVEL DROPPING BELOW PROBE DUE TO TANK BULGING AT PRESSURIZATION.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. LOSS OF LOX 99.5 PERCENT FULL SIGNAL CAUSED COMMIT STOP.						
VEHICLE EFFECT-COUNTDOWN ABORTED AND RE-SCHEDULED.						
CORRECTIVE ACTION-LOX 99.5 PERCENT FULL SIGNAL TEMPORARILY DELETED FROM COMMIT SEQUENCE SUMMARY. REQUEST MADE FOR P ERMANENT CHANGE IN LAUNCH CONTROL LOGIC.						
P.U./LOADING-GDC-A/B LOADING PROBE	AE80-0323/P4-402-00-30	COUNTDOWN	30D 600729	ETR -420	NO NO	993031
FAILURE MODE-OUT OF TOLERANCE. INCORRECT LOX LEVEL DUE TO SLOW SUBCOOLED LOX TOPPING.						
SYSTEM EFFECT-OPERATION TOO LOW. SUBCOOLED LOX TOPPING REQUIRED MORE TIME.						
VEHICLE EFFECT-COUNTDOWN DELAYED. NO HOLD.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	AE80-0323/P4-402-00-30 LIGHT INDICATOR	COUNTDOWN	30D 600729	ETR -540	NO NO	993032
FAILURE MODE-FAIL DURING OPERATION. LOX 95 PERCENT LIGHT NOT WORKING.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B LOADING PROBE	D4218/ FUEL LOADING PROBES	COMPOSITE-FRD/DPL	74D 600723	5768-1	NO YES	
FAILURE MODE-ERRATIC OPERATION. FAULTY INDICATIONS FROM THE 90 AND 99.5 PERCENT FUEL PROBES. THIS IS A RECURRING PR OBLEM THAT IS YET TO BE RESOLVED.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY.						
VEHICLE EFFECT-COMPOSITE DELAYED.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-UNKNOWN.							897240
P.U./LOADING-GOC-A/B LOADING PROBE	DA216/82-4MO-02-33 FUEL LOADING PROBE	COMPOSITE-FRD/DPL	33D 600714	WTR	YES NO		896424
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LOS 90 PERCENT PROBE FAILED TO LOCK IN.							
SYSTEM EFFECT-IMPROPER DISCRETE. 93 PCT PROBE STOPPED RAPID LOAD.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							897773
P.U./LOADING-GOC-A/B LOADING PROBE	AE60-0338/P2-402-00-60 RUPTURE DISC	COUNTDOWN	60D 600702	ETR -1960	NO NO		
FAILURE MODE-OUT OF TOLERANCE. LOX TANKING INCOMPLETE DUE TO BLOWN RUPTURE DISC IN LOX TOPPING SYSTEM TWO INCH LINE							
SYSTEM EFFECT-OPERATION TOO LOW. TANKING COULD NOT BE CONTINUED UNTIL DISC WAS REPLACED.							
VEHICLE EFFECT-COUNTDOWN DELAYED TO REPLACE RUPTURE DISC. 25 MINUTES HOLD.							
CORRECTIVE ACTION-REPLACE RUPTURE DISC.							896412
P.U./LOADING-GOC-A/B LOADING PROBE	AE60-0338/P1-402-00-60 PUMP	COUNTDOWN	60D 600702	ETR -1500	NO NO		
FAILURE MODE-FAIL DURING OPERATION. LOW LOX STORAGE TANK PRESSURE CAUSED PUMPS LA AND LB TO CAVITATE RESULTING IN I NABILITY TO OBTAIN PROPER LOX LEVEL.							
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. CAVITATION OF PUMPS LA AND LB STOP LOX FLOW TO THE VEHICLE.							
VEHICLE EFFECT-NONE. NO HOLD CALLED.							
CORRECTIVE ACTION-INCREASE STORAGE TANK PRESSURE.							
P.U./LOADING-GOC-A/B LOADING PROBE	DA209/83-4MO-03-33 SENSOR	COMPOSITE-FRD/DPL	33D 600618	WTR	YES NO		
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME 90 PERCENT SENSOR FAILED TO LOCKUP. UPON RECEIVING THE 93 PERCENT INDICATION A LOAD CONTROL FAILURE WAS RECEIVED.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. FUEL LOAD CONTROL FAILURE WAS RECEIVED.							
VEHICLE EFFECT-NONE.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-NONE. (THIS WAS HAPPENED ON PREVIOUS TEST ON B SITE).						096342
P.U./LOADING-GDC-A/B LOADING PROBE	DA208/B3-4NO-01-83 SENSOR	COMPOSITE-FRD/DPL	53D 600813	WTR	YES NO	YES 60/C	096292
FAILURE MODE-PREATURE OPERATION. BOTH SECTIONS OF THE LOX OVERFILL SENSOR FAILED MET.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. FALSE LOX OVERFILL INDICATIONS WERE RECEIVED.							
VEHICLE EFFECT-COMPOSITE ABORTED.							
CORRECTIVE ACTION-SENSOR REPLACED.							
P.U./LOADING-GDC-A/B LOADING PROBE	AE60-0321/P1-401-00-34 FLANGE GASKET	COUNTDOWN	54D 600811	ETR -900	NO NO		097966
FAILURE MODE-OUT OF TOLERANCE. LOX TANKING STOPPED DUE TO BLOWN GASKET ON OUTLET FLANGE OF LOX PUMP LA.							
SYSTEM EFFECT-OPERATION STOPS PREMATURELY- LOX TANKING STOPPED DUE TO LEAK AT TRANSFER UNIT.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 136 MINUTES HOLD 30 MINUTES RECYCLE.							
CORRECTIVE ACTION-GASKET REPLACED.							
P.U./LOADING-GDC-A/B LOADING PROBE	DA208/B1-4NO-09-47 SENSOR	COMPOSITE-FRD/DPL	47D 600802	WTR	YES NO		096343
FAILURE MODE-PREATURE OPERATION. UPON RECEIVING THE 99.8 PERCENT FULL INDICATION AN OVERFILLED INDICATION WAS ALSO RECEIVED.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL AN ERRONEOUS FUEL OVERFILLED INDICATION.							
VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-FUEL WAS STOPPED AND STARTED THUS LOSING THE OVERFILL INDICATION.							
P.U./LOADING-GDC-A/B LOADING PROBE	ETR-009/14-903-EI-82 LOX TOPPING HIGH PROBE	CAPTIVE	1-4 E BE RIES 600304	WTR	YES NO		
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. PROBE WAS IMMERSSED IN LIQUID FOR 116 SEC. (AS INDICATED BY THE IDP SYSTEM) BEFORE IT INDICATED MET.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							



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CORRECTIVE ACTION-UNKNOWN.							992409
P.U./LOADING-GDC-A/B LOADING PROBE	FTAB580/PI-401-00-42 RUPTURE DISC	PNF	42D 900204	ETR 2040	NO NO		991902
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. MISSILE COULD NOT BE TANKED DUE TO A RUPTURED RUPTURE DISC IN THE LOX STORAGE TANK.							
SYSTEM EFFECT-OPERATION DOES NOT START. MISSILE COULD NOT BE TANKED DUE TO A RUPTURED RUPTURE DISC IN THE LOX STORAGE TANK.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 17 MINUTES HOLD, ONE MINUTE RECYCLE.							
CORRECTIVE ACTION-REPLACE RUPTURE DISC.							
P.U./LOADING-GDC-A/B LOADING PROBE	DA156/A3-403-00-06 PROBE	COUNTDOWN	6D 900126	WTR	NO NO		998917
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-NO INDICATIONS OF MISSILE LOX 90 PCT FULL, 95 PCT FULL OR OVERFILL WERE RECEIVED. LACK OF THESE INDICATIONS POSSIBLY CAUSED BY A LOOSE UNBILICAL AND/OR IMPROPER ADJUSTMENTS IN THE PLC U LOX EMERGENCY CONTROL SECTION.							
SYSTEM EFFECT-OPERATION TOO LONG-LOX WAS LOADED UNTIL OBSERVED FLOWING OUT THE BOILOFF VALVE.							
VEHICLE EFFECT-COUNTDOWN DELAYED.							
CORRECTIVE ACTION-UNBILICAL CHECKED AND PLCU ADJUSTMENTS CHECKED							
P.U./LOADING-GDC-A/B LOADING PROBE	DA156/A3-401-00-06 LOX PROBE	COUNTDOWN	6D 900122	WTR	YES NO		998993
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-LOX 90 PCT. AND 99.5 PCT. FULL INDICATIONS WERE NOT RECEIVED. HIGH TEMPERATURE AND LOWER DENSITY OF THE BULK LOX COULD HAVE PREVENTED THE PU SYSTEM OR BACKUP PROBES FROM SENSING THE NECESSARY CONDITIONS FOR A 90 PCT. AND A 99.5 PCT. LEVEL INDICATION.							
SYSTEM EFFECT-OPERATION TOO LONG-LOX WAS LOADED UNTIL OBSERVED FLOWING OUT OF BOILOFF VALVE.							
VEHICLE EFFECT-COUNTDOWN ABORTED.							
CORRECTIVE ACTION-UNKNOWN.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-50C-A/B LOADING PROBE	DA132/B2-4MO-11-23 FUEL PROBE	COMPOSITE-FRD/DPL	25D 800113	WTR	YES NO	000000
FAILURE MODE-PREATURE OPERATION-AT FUEL LOAD START A 98.3 PCT. FUEL FILL INDICATION WAS RECEIVED.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY-PROPELLANTS COULD NOT BE LOADED.						
VEHICLE EFFECT-COUNTDOWN ABORTED.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-50C-A/B LOADING PROBE	DA132/B2-4MO-10-23 FUEL PROBES	COMPOSITE-FRD/DPL	25D 800113	WTR	YES NO	000007
FAILURE MODE-ERRATIC OPERATION-93 PCT. FULL AND 90 PCT. SENSOR FAILED INDICATION RECEIVED, THEN 90 PCT. FULL INDICATION RECEIVED. SHORTLY AFTER CHILLDOWN START A FUEL TANK OVERFILL INDICATION RECEIVED.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY-LOK COULD NOT BE LOADED.						
VEHICLE EFFECT-COUNTDOWN ABORTED.						
CORRECTIVE ACTION-UNKNOWN						
P.U./LOADING-50C-A/B LOADING PROBE	DA132/B2-4MO-09-23 FUEL PROBES	COMPOSITE-FRD/DPL	25D 800111	WTR	YES NO	000000
FAILURE MODE-ERRATIC OPERATION-93 PCT. FULL AND 90 PCT FULL INDICATION RECEIVED WHICH CLOSED FUEL LOAD VALVES, THEN 90 PCT. FULL INDICATION WAS RECEIVED AFTER 640 AND A/B FILL AND DRAIN VALVES WERE CLOSED.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY-LOK COULD NOT BE LOADED.						
VEHICLE EFFECT-COUNTDOWN ABORTED.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-50C-A/B LOADING PROBE	DA132/B2-4MO-07-23	COMPOSITE-FRD/DPL	25D 800107	WTR	NO NO	000078
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. NO INDICATION OF 90.8 PCT. FULL OR 100.8 PCT. FULL RECEIVED. PLCU FUEL DENSITY SETTING WAS FOUND TO BE SET TOO LOW.						
SYSTEM EFFECT-OPERATION TOO LONG. LOR WAS FINE LOADED THROUGH THE BOILOFF VALVE.						
VEHICLE EFFECT-COUNTDOWN ABORTED.						
CORRECTIVE ACTION-CORRECT PLCU FUEL DENSITY SETTING.						

GENERAL AMICS  
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	DATE DIF	DATE DIF	PRI	VEHICLE NAME VENDOR PART NO
P.U./LOADING-GDC-A/B LOADING PROBE	DA128/B2-4MO-01-23	COMPOSITE-FRD/DPL	250	WTR	YES	NO		998775
<p>FAILURE MODE-FAILED DURING OPERATION. DURING THE AUTOMATIC FUEL DRAIN SEQUENCE, THE MISSILE FUEL TANK WAS OVERFILLED INSTEAD OF DRAINED.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-NONE. FUEL WAS FORCED INTO THE PRESSURIZATION CONTROL UNIT (PCU) AND PORTIONS OF THE AIRBORNE PNEUMATICS SYSTEM.</p> <p>CORRECTIVE ACTION-UNKNOWN. AIRBORNE PNEUMATIC SYSTEM PURGED AND FUEL AIRBORNE REGULATOR AND RELIEF VALVE REPLACED.</p>								
P.U./LOADING-GDC-A/B LOADING PROBE	FT4625/P1-401-00-26 RUPTURE DISC	COUNTDOWN	240	ETR	NO	NO		998580
<p>FAILURE MODE-FAIL DURING OPERATION. TANKING COULD NOT BE CONTINUED DUE TO RUPTURE DISC BLOWING IN LOX STORAGE TANK VENT LINE. DISC SHOULD NORMALLY RUPTURE AT 90 PSI BUT RUPTURED AT 35 PSI.</p> <p>SYSTEM EFFECT-OPERATION STOPS PREMATURELY. LOX COULD NOT BE TANKED DUE TO RUPTURE DISC FAILURE.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. 24 MINUTE HOLD.</p> <p>CORRECTIVE ACTION-REPLACED RUPTURE DISC.</p>								
P.U./LOADING-GDC-A/B LOADING PROBE	DA112/A2-4MO-01-21 95 PCT LOX LOADING PROBE	COMPOSITE-FRD/DPL	210	WTR	YES	NO		998508
<p>FAILURE MODE-PRE-MATURE OPERATION-95 PCT LOX-LOADING PROBE ACTIVATED SIMULTANEOUSLY WITH 90 PCT LOX LOADING PROBE. UNKNOWN CAUSE.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. PREMATURELY TERMINATED LOX LOAD</p> <p>VEHICLE EFFECT-COUNTDOWN WAS ABORTED AND RESCHEDULED</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>								
P.U./LOADING-GDC-A/B LOADING PROBE	DA108/B1-4BN-02-27 FUEL PROBES CIRCUITRY	COMPOSITE-FRD/DPL	270	WTR	YES	ACUSTICA NO		
<p>FAILURE MODE-PREMATURE OPERATION-DURING FUEL LOADING 99.5 PCT. FULL AND OVERFILL PROBE INDICATIONS WERE RECEIVED 91 MULTANEOUSLY DUE TO IMPROPER WIRING OF THE PROBES.</p> <p>SYSTEM EFFECT-PREMATURE SHUTDOWN OF FUEL LOADING SEQUENCE.</p>								

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## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-FIRSCORDE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-DPL WAS ABORTED AND RESCHEDULED.							670003
CORRECTIVE ACTION-UNKNOWN, HOWEVER, A CHANGE IN PROBE WIRING WAS PROBABLY EFFECTED.							
P.U./LOADING-GDC-A/B LOADING PROBE	DA107/B1-40N-01-27 FUEL PROBE	COMPOSITE-FRD/DPL	27D 990928	WTR	YES NO		840709
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-FUEL 99.5 PCT PROBE FAILED PRIOR TO MISSILE TANKING COMPLETION. SYSTEM EFFECT-OPERATION STOPPED PREMATURELY. VEHICLE EFFECT-DPL ABORTED AND RESCHEDULED. CORRECTIVE ACTION-WIRING WAS CHANGED TO UTILIZE A BACKUP PROBE.							
P.U./LOADING-GDC-A/B LOADING PROBE	AZC-27-084/AZ-402-00-12 FUEL OVERFILL SENSOR	COUNTDOWN	12D 390909	WTR	YES NO		894043
FAILURE MODE-PREMATURE OPERATION FUEL RAPID LOAD STOPPED DUE TO PREMATURE SENSOR ACTIVATION. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. VEHICLE EFFECT-COUNTDOWN DELAYED. CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B LOADING PROBE	PTA6095/P2-303-00-11	COUNTDOWN	11C 390924	ETR -450	NO NC		890308
FAILURE MODE-OUT OF TOLERANCE. LOZ TANKING WAS NOT COMPLETED BY THE PRESCRIBED TIME. SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOZ ABOARD. VEHICLE EFFECT-COUNTDOWN DELAYED. 3 MINUTE HOLD. CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B LOADING PROBE	PTA6094/P2-302-00-11	COUNTDOWN	11C 390921	ETR -450	NO NO		
FAILURE MODE-OUT OF TOLERANCE. LOZ TANKING WAS NOT COMPLETED BY THE PRESCRIBED TIME. SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOZ ABOARD THE VEHICLE. VEHICLE EFFECT-COUNTDOWN DELAYED. 3 MINUTE HOLD.							

GENERAL DYNAMICS  
CONVAIR DIVISION

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-HOLD TO COMPLETE TANKING.							998297
P.U./LOADING-GDC-A/B LOADING PROBE	FTA6049/P8-301-00-11 FILTER	FRF	11C 990814	ETR -420	NO NO		993298
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. FLIGHT LEVEL OF 99.5 TO 99.9 PERCENT W. ACHIEVED DUE TO FAILURE OF THE SUB-COOLED TOPPING SYSTEM, WHICH HAD FAILED BECAUSE OF AN ICE-CLOGGED FILTER IN THE FUEL LINE AND MOISTURE IN THE FUEL LINE.							
SYSTEM EFFECT-OPERATION TOO LOW. SERIES B TYPE TANKING METHODS PROVIDED ONLY 96.9 PERCENT OF FULL LOAD.							
VEHICLE EFFECT-COUNTDOWN DELAYED. 29 MINUTES HOLD.							
CORRECTIVE ACTION-TANKED ABOVE DESIRED FLIGHT LEVEL AND DRAINED ENOUGH LOX TO MEET ENGINE DELTA TEMPERATURE REQUIREMENTS.							
P.U./LOADING-GDC-A/B LOADING PROBE	FTA4874/P3-401-00-03	FRF	5D 990415	ETR -40	NO NO		993286
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. THE FIRST ATTEMPT TO OBTAIN A LOX FLIGHT LEVEL YIELDED A PLCU READING OF 100.3 PERCENT WHICH IS ABOVE THE UPPER TOLERANCE OF 99.9 PERCENT.							
SYSTEM EFFECT-OPERATION TOO HIGH. LOX LEVEL WAS TOO HIGH ON FIRST ATTEMPT TO OBTAIN FLIGHT TANKING LEVEL.							
VEHICLE EFFECT-COUNTDOWN DELAYED. COUNTDOWN WAS RECYCLED FROM 7-18 SECONDS AND HOLDING TO 7-7 MINUTES AND HOLDING. HOLD TIME WAS 8 MINUTES.							
CORRECTIVE ACTION-LOX LEVEL WAS ADJUSTED TO A LEVEL WHICH BROUGHT THE PLCU WITHIN TOLERANCE AT IGNITION.							
P.U./LOADING-GDC-A/B LOADING PROBE	51-304-83-02 LOX LOADING SENSORS	CAPTIVE	2C 581212	3YC YES	YES NO		993520
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOX LOADING PROBES FAILED TO ACTIVATE DURING TANKING (95 PERCENT A NO OVERFILL PROBES).							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GDC-A/B LOADING PROBE	FTA4323/P1-203-00-09 FILTER FLANGE	FRF	9B 581027	ETR -1800	NO NO		
FAILURE MODE-LEAK. LOX TRANSFER LINE FILTER FLANGES LEAKED. RESULTING IN INABILITY TO TANK THE MISSILE.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE	SITE DIP TIME	PRI VENDOR NAME	OTH VENDOR PART NO	
SYSTEM EFFECT-OPERATION DOES NOT START. THE MISSILE COULD NOT BE TANKED WITH LOX. VEHICLE EFFECT-COUNTDOWN DELAYED. 8 MINUTES RECYCLE AND 14 MINUTES HOLD. CORRECTIVE ACTION-TIGHTEN BOLTS ON FLANGE.							091767
P.U./LOADING-60C-A/B LOADING PROBE	FTA4323/P1-203-009 PUMP	PRF	98 581027	ETR	NO	NO	091769
FAILURE MODE-OUT OF SPECIFICATION-LOX TOPPING PUMP LC FAILED DURING TWO RETOPPING ATTEMPTS. AS A RESULT OF THIS FAILURE, IGNITION LOX LEVEL WAS 7,750 LBS LESS THAN DESIRED. SYSTEM EFFECT-OPERATION TOO LOW. INSUFFICIENT LOX WAS LOADED. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.							091769
P.U./LOADING-60C-A/B LOADING PROBE	FTA4323/P2-203-00-9 PUMP	PRF	98 581027	ETR	NO	NO	091769
FAILURE MODE-OUT OF TOLERANCE. FUEL PUMP B WOULD NOT OPERATE DUE TO A MECHANICAL PROBLEM WITH THE CIRCUIT BREAKER IN EXCEPTABLE ARM. AS A RESULT, FUEL COULD NOT BE TANKED TO THE MISSILE AT THE NORMAL RATE. SYSTEM EFFECT-OPERATION TOO LOW. FUEL COULD NOT BE TANKED TO THE MISSILE AT THE NORMAL RATE. VEHICLE EFFECT-COUNTDOWN DELAYED. MINUTES. CORRECTIVE ACTION-REPOSITION BREAKER RECEPTACLE ARM.							091803
P.U./LOADING-60C-A/B LOADING PROBE	FTA4322/P1-202-06-9 PUMP	PRF	90 581024	ETR -480	NO	NO	091803
FAILURE MODE-OUT OF TOLERANCE. PUMP LC WOULD NOT OPERATE. TANKING WITH PUMP LA AND LB WAS CONTINUED. SYSTEM EFFECT-OPERATION TO LOW. TANKING RATE WAS LOW. VEHICLE EFFECT-COUNTDOWN DELAYED. HOLD FOUR AND A HALF MINUTES. CORRECTIVE ACTION-UNKNOWN.							091803
P.U./LOADING-60C-A/B LOADING PROBE	FTA4288/P3-202-00-06	COUNTDOWN	98 580316	ETR -480	NO	NO	091803
FAILURE MODE-OUT OF TOLERANCE. LOX TOPPING WAS NOT ON SCHEDULE.							091803

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
SYSTEM EFFECT-OPERATION TOO LOW. LOX TOPPING INCOMPLETE. VEHICLE EFFECT-COUNTDOWN DELAYED. ONE MINUTE HOLD. CORRECTIVE ACTION-HOLD TO COMPLETE LOX TOPPING.							092630
P.U./LOADING-GDC-A/B LOADING PROBE	FTA253/P4-203-00-8	COUNTDOWN	8B 580614	ETR -210	NO NO		092637
FAILURE MODE-OUT OF TOLERANCE. NO-60 REPORT ON 1 MINUS 3.50 MINUTES. STATUS REPORT FOR LOX COMPLETE. SYSTEM EFFECT-OPERATION TOO LOW. LOX TANKING SLOW. VEHICLE EFFECT-COUNTDOWN DELAYED. 2 MINUTE HOLD. 20 SECONDS RECYCLE TIME. CORRECTIVE ACTION-HOLD TO COMPLETE LOX TOPPING.							092622
P.U./LOADING-GDC-A/B LOADING PROBE	FTA253/P4-202-00-8	COUNTDOWN	8B 580911	ETR -300	NO NO		091927
FAILURE MODE-OUT OF TOLERANCE. LOX TANKING SLOW. SYSTEM EFFECT-OPERATION TOO LOW. VEHICLE EFFECT-COUNTDOWN DELAYED. 2 MINUTE HOLD. CORRECTIVE ACTION-HOLD TO SECURE LOX TANKING.							091927
P.U./LOADING-GDC-A/B LOADING PROBE	FTA208/P3-201-00-4 PUMP	FRF	4B 580716	ETR -300	NO NO		091927
FAILURE MODE-OUT OF TOLERANCE. COMPLETE LOX LOAD COULD NOT BE ACHIEVED DUE TO FAILURE OF PUMP LC. SYSTEM EFFECT-OPERATION STOPS PREMATURELY. LOX LOADING CEASED AT A LEVEL 2,000 POUNDS BELOW THE DESIRED LEVEL. VEHICLE EFFECT-COUNTDOWN DELAYED. 2 MINUTE HOLD AND 2 MINUTE RECYCLE. CORRECTIVE ACTION-NONE. PERFORMED TEST WITH LOX LEVEL 2000 POUNDS BELOW DESIRED.							091927
P.U./LOADING-GDC-A/B LOADING PROBE	FTA232/P4-102-00-12 DUKTING, BELLOW	COUNTDOWN	12A 571217	ETR -3000	YES NO		091927
FAILURE MODE-LEAK-EXTERNAL. LEAK IN LOX BUMP LINE BELLOW AT LAUNCHER. SYSTEM EFFECT-NONE.							091927

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CONVAIR DIVISION

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OIM	VENDOR NAME VENDOR PART NO
VEHICLE EFFECT-COUNTDOWN DELAYED. 123 MIN HOLD.						
CORRECTIVE ACTION-REPLACE BELLOWS.						
P.U./LOADING-GOC-A/B LOADING PROBE	FTAE289/P2-1MM-01-10 FLOW METER	COMPOSITE-PRD/DPL	10A 971115	ETR -27	NO NO	
FAILURE MODE-OUT OF TOLERANCE. DELTA TEMPERATURE AT LOZ FLOW METER WAS TOO HIGH, NECESSITATING REPEATED DETANKING OPERATIONS. ONE SUCH OPERATION BROUGHT THE LOZ LEVEL BELOW FLIGHT LEVEL. THE DELTA-T TRANSDUCER WAS DETERMINED TO BE THE WRONG KIND.						
SYSTEM EFFECT-ERRATIC OPERATION. SATISFACTORY LOZ LEVEL WAS DIFFICULT TO MAINTAIN.						
VEHICLE EFFECT-COMPOSITE DELAYED. 67 MINUTE HOLD AND 7 MINUTE RECYCLE. HOLD SHARED WITH ANOTHER SYSTEM.						
CORRECTIVE ACTION-THE DELTA-T TRANSDUCER WAS REPLACED.						
P.U./LOADING-GOC-A/B LOADING PROBE	FTAE289/P4-101-00-06 DUCTING AND TUBING-FLEX	FRP	9A 970920	ETR -10660	YES NO	
FAILURE MODE-EXTERNAL LEAK. A FUEL LEAK WAS OBSERVED AT A CONNECTION IN THE PU FUEL HEAD SENSING LINE. THE CONNECTION WAS TIGHTENED AND THE LEAK WAS ELIMINATED.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-COUNTDOWN DELAYED. 289 MINUTES OF HOLD FOR THIS AND OTHER LEAKS.						
CORRECTIVE ACTION-TIGHTEN CONNECTION.						
P.U./LOADING-GOC-A/B LOADING PROBE	ZE-T-223/P2-38N-01-11 PROBE	COMPOSITE-PRD/DPL	11C	ETR	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE MISSILE LOW TANK OVERFILL PROBE FAILED.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GOC-A/B STILLWELL	99AE793.1 LOZ LEVEL PROBE	UTP-PRT 99-43210-1	9A1119	GO/C	YES NO	99-43210-1
FAILURE MODE-LEAK. EXTERNAL. DURING PRT POST VIBRATION PROOF PRESSURE TEST AT 25 PSIG GME. THE PROBE LEAKED 100CC PER MINUTE BETWEEN THE METAL HEX AND THE POTTING. FAILURE ANALYSIS INDICATED SOLDER VOIDS CAUSED BY IMPROPER SOLDER TECHNIQUES.						



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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
						012249
	CORRECTIVE ACTION-PRODUCTION AND QC ADHERE MORE CLOSELY TO B/P REQUIREMENTS AND CONTROL PROCEDURES. REF CTCTH NO 662-9-002.					
P.U./LOADING-GDC-A/B STILLWELL	69A2142.3 STILLWELL ASSEMBLY, OXIDIZER LEVEL 69-43228-3	UTP-8LT	641119	60/C	YES 60/C NO 69-43228-3	091112
FAILURE MODE-STRUCTURAL. DURING 3LT X-AXIS VIBRATION AT 44 CPS THE STILLWELL BROKE /CRACKED/ IN TWO RADIIALLY ABOVE THE UPPER TRANSDUCER. REF S/N 408-0013 T.H. NO 7.						
CORRECTIVE ACTION-NO FURTHER ACTION TAKEN SINCE TEST EXCEEDED DESIGN LEVELS TESTING. REF CTCTH NO 662-9-001.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.3 STILLWELL ASSEMBLY, OXIDIZER LEVEL 69-43228-3	UTP-PAT	641015	60/C	NO 60/C NO 69-43228-3	092407
FAILURE MODE-OUT OF SPECIFICATION. DURING PAT 15P1 THE VOLTAGE DROPS IN G42 VARIED FROM 2.02 TO 2.24 VOLTS AT 162 M A. MINIMUM VOLTAGE ALLOWED IS 2.25 VOLTS. RESPONSE TIME FROM L2 TO G42 AT 162 MA VARIED FROM 5.2 TO INFINITE SECOND S. MAXIMUM TIME ALLOWED IS 5.0 SECONDS. REF. S/N 408-0013T.H. NO 1.						
CORRECTIVE ACTION-SPEC 27-04243 WAS REVISED TO REFLECT NEW RESPONSE TIME REQUIREMENTS. REF. RTFM NR F-43355T AND CTCTH NO 662-9-001.						
P.U./LOADING-GDC-A/B STILLWELL	69A2795.1 LOC LEVEL PROBE	UTP-PRT 69-43210-1	640903	60/C	YES 60/C NO 69-43210-1	092246
FAILURE MODE-OUT OF SPECIFICATION. DURING PRT 15P1 THE AVERAGE RESPONSE TIME FROM L2 TO G42 AT 162 MA WAS 10.51 SEC C FOR ELEMENT A AND 12.76 SEC FOR ELEMENT B. MAXIMUM ALLOWABLE RESPONSE TIME IS 5.0 SECONDS. REF S/N 001 T.H. NO 2						
CORRECTIVE ACTION-SPEC27-04243 WAS REVISED TO REFLECT NEW RESPONSE TIME REQUIREMENTS. REF ECP 7689. REF RTFM NR F-4345 ST. FRMO FR 454-2-408 AND DMR 65-04-20.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.2 STILLWELL ASSEMBLY, OXIDIZER LEVEL 69-43228-3	UTP-PRT	640510	60/C	YES 60/C NO 69-43228-3	
FAILURE MODE-STRUCTURAL. THE 24 HOUR IMMERSION IN THE SATEMAN RX 2221 SOLUTION REMOVED THE GOLD COLORED COATING FROM THE STILLWELL TUBE (IT WAS NOT ANODIZED) AND RESULTED IN CORROSION SPOTS ON THE TRANSDUCER CARTRIDGES REF. S/N 404-0001 T.H. NOB.						

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENIOR NAME VENDOR PART NO	
							092406
	CORRECTIVE ACTION-SPEC 27-04243 WAS REVISED TO DELETE THIS IMMERSION TEST AND REPLACE IT WITH A TRICHLOROETHYLENE L ON CLEANING. REF. RTFN NR F-42023T AND FFR NO FR 634-E-288.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.2 STILLWELL ASSEMBLY, OXIDIZER LEVEL	UTP-PAT 69-43228-3	640417	60/C	YES 60/C NO 69-43228-3		092405
	FAILURE MODE-OUT OF TOLERANCE. DURING PAT EOP THE 69-43228 (EPLON RING WAS FOUND NOT INSTALLED UNDER THE 27-04983-3 CONNECTOR CLAMP. REF. S/N 404-0001 T.M. NO 1.						
	CORRECTIVE ACTION-REWORK ASSEMBLY TO BLUEPRINT AND REINSTATE IN TEST. INITIATE CLOSER SC ON PART. REF. REJECTION TA 6 NO 629214, RTFN NR F-42403T AND FFR NO FR 634-E-64-248.						
P.U./LOADING-GDC-A/C STILLWELL	69A2141.2 LOE LEVEL PROBE	UTP-SLT 69-43205-3	640325	60/C	YES 60/C NO		092252
	FAILURE MODE-OUT OF SPECIFICATION. DURING SLT INITIAL SATISFACTORY PERFORMANCE TEST, THE RESPONSE TIME OF BOTH ELEM ENTS EXCEEDED THE ALLOWABLE OF 0.45 SEC AT 100 W AS FOLLOWS. ELEMENT A 0.75 SEC, ELEMENT B 1.10 SEC. REF. FDR NR P4 209 ST, S/N 009.						
	CORRECTIVE ACTION-CONTINUE TEST. CARR F42093C-1 TO DETERMINE WHETHER TEST METHODS, EQUIPMENT, AND PROCEDURES ARE AD EQUATE. REF. FFR F42093C-2-64-219 AND SUPPLEMENT A.						
P.U./LOADING-GDC-A/B STILLWELL	69A2141.2 LOE LEVEL PROBE	UTP-PAT 69-43205-3	640302	60/C	60/C 69-43205-3		092230
	FAILURE MODE-CONTAMINATION. DURING PAT EOP, A LONG FIBER WAS FOUND HOOKED BETWEEN TWO LOOPS OF ONE OF THE SENSING E LEMENTS. NOTE LOE CLEANING REQUIREMENTS HAD BEEN WAIVED FOR THIS TEST. REF S/N 009 T.M. NO 1.						
	CORRECTIVE ACTION-REMOVE FIBER. REF IN M0964475 AND RTFN NR F-4217 ST.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.1 STILLWELL ASSEMBLY, OXIDIZER LEVEL	UTP-SLT 69-43228-1	640204	60/C	YES 60/C NO 69-43228-1		
	FAILURE MODE-STRUCTURAL. DURING SLT X-AXIS VIBRATION AT 33 CPD THE STILLWELL BROKE (CRACKED) IN TWO, RADIALLY ABOVE THE UPPER TRANSDUCER. REF. S/N 003 T.M. NO 13.						

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CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
	CORRECTIVE ACTION-NO FURTHER ACTION TAKEN SINCE TEST EXCEEDED DESIGN LEVELS TESTING. REF. RTFM NR F-413187 AND FRR NO 654-2-126.						892404
P.U./LOADING-GDC-A/B STILLWELL	69A2142.1 STILLWELL ASSEMBLY, OXIDIZER LEVEL 99-43228-1	UTP-PRT	840131	60/C	YES 60/C NO 87-43228-1		892377
	FAILURE MODE-STRUCTURAL. FOLLOWING PRT VIBRATION TESTING ONE OF THE TWO SUPPORTING BRACES WAS DEFORMED BY ELONGATION & THE MOUNTING HOLE. (P/M 27-44988-3). REF. S/N 003 T.H. NO.9.						
	CORRECTIVE ACTION-REPLACE BRACE AND CONTINUE TEST. REF. IR 944423.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.1 STILLWELL ASSEMBLY, OXIDIZER LEVEL 99-43228-1	UTP-PRT	840130	60/C	YES 60/C NO 99-43228-1		892378
	FAILURE MODE-STRUCTURAL. DURING PRT VIBRATION ONE END OF ONE OF THE TWO BRACES WAS FOUND TO BE CRACKED. (P/M 27-807 82-11) Z AXIS VIBRATION. REF. S/N 003 T.H. NO.9.						
	CORRECTIVE ACTION-REPLACE BRACE AND CONTINUE TEST. REF. IR 944424 AND RTFM NR F-4124 8T.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.1 STILLWELL ASSEMBLY, OXIDIZER LEVEL 99-43228-1	UTP-PRT	840121	60/C	YES 60/C NO 99-43228-1		892380
	FAILURE MODE-OUT OF SPECIFICATION. DURING PRT FOLLOWING Z AXIS VIBRATION THE LINE SLOSHING INSIDE THE STILLWELL TUBE ACROSS THE UPPER TRANSDUCERS REDUCED THE ELEMENT VOLTAGE BELOW 1.5 VOLTS FROM 10 TO 65 CPS AT 210 (PLUS MINUS 2) H.A. MINIMUM ALLOWABLE IS 3.0 VOLTS. REF. S/N 003 T.H. NO. 8.						
	CORRECTIVE ACTION-NONE. REF. RTFM NR F-413187 AND FRR NO. FR654-2-126.						
P.U./LOADING-GDC-A/B STILLWELL	69A2142.1 STILLWELL ASSEMBLY, OXIDIZER LEVEL 99-43228-1	UTP-PAT	840118	60/C	YES 60/C NO 99-43228-1		892420
	FAILURE MODE-OUT OF SPECIFICATION. DURING PAT TEST THE RESPONSE TIME OF ALL 6 ELEMENTS WAS ERRATIC AND EXCEEDED THE MAXIMUM ALLOWABLE 0.45 SECONDS. REF. S/N 003 T.H. NO.8.						
	CORRECTIVE ACTION-CHANGE TEST PROCEDURE CURRENT TO 190 M.A. PLUS OR MINUS 8 M.A. REF. RTFM NR F-410887 AND FRR NO FR 654-2-126.						

GENERAL MICS  
CONVAIR DIVISION

18 JUN 1988

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GOC-A/B STILLWELL	89A2142-1 STILLWELL ASSEMBLY, OXIDIZER LEVEL 89-43228-1	UTP-PAT	640114	60/C	YES NO	60/C 89-43228-1	892421
FAILURE MODE-OUT OF SPECIFICATION. DURING PAT 18PT, WITH THE TRANSDUCERS IN 6M2 AT 200 M.A. THE VOLTAGE DROPS RANGE D FROM 2.28 TO 2.59 VOLTS. MINIMUM ALLOWABLE IS 3.00 VOLTS. REF. 8/M 003 T.M. NO4.							
CORRECTIVE ACTION-CHANGE TEST PROCEDURE CURRENT TO 190 M.A. PLUS OR MINUS 8 M.A. REF. RTFM NR P-41088T AND FRR NO F R 934-2-128.							
P.U./LOADING-GOC-A/B STILLWELL	89A2142-1 STILLWELL ASSEMBLY, OXIDIZER LEVEL 89-43228-1	UTP-PAT	831219	60/C	YES NO	60/C 89-43228-1	892403
FAILURE MODE-OUT OF SPECIFICATION. DURING EOP FOR PAT IT WAS NOTED THAT 8N45GOC3-7 BOLTS WERE NOT CRIMPED AS SPEC IFIED BY NOTE 1.6 OF BLUEPRINT 89-43228. REF. 8/M 003 T.M. NO 2.							
CORRECTIVE ACTION-REWORK SPECIMEN FOR BLUEPRINT. CONTINUE TESTING AFTER Rework IS APPROVED. REF. IR NO 942919, RTFM NR F-4091 ST AND FRR NO FR 934-2-087.							
P.U./LOADING-GOC-A/B COMPUTER	89C3553-1 CONVERTER AMPLIFIER	UTP-GUAL/PPT 7-04351-5	850115	CONVAIR	YES NO	YES CRESCENT NO 101120	893334
FAILURE MODE-OUT OF TOLERANCE. THE CHARACTERS IDENTIFYING THE ELECTRICAL CONNECTIONS ARE ONLY 0.125 INCHES HIGH INS TEAD OF 0.190 INCHES SPECIFIED. THE LEGIBILITY OF THE COMPONENT IDENTIFICATION IS POOR. REF. 8/M 501-0503 T.M. NO 9.							
CORRECTIVE ACTION-CONTINUE TESTING. A VIR WAS SUBMITTED TO 60/C AND APPROVED WHICH WAIVED THE TERMINAL LETTER SIZE FOR LOT NO 1.							
P.U./LOADING-GOC-A/B COMPUTER	89C3553-1 CONVERTER AMPLIFIER	UTP-GUAL/PPT 7-04351-5	841201	CONVAIR	YES NO	YES CRESCENT NO 101120	893332
FAILURE MODE-OUT OF TOLERANCE. DURING ELECTROMAGNETIC INTERFERENCE COMPATIBILITY TESTS THE CONVERTER AMPLIFIER WAS FOUND TO BE AUDIO SUSCEPTIBLE IN A FREQUENCY RANGE OF 50 TO 100 CYCLES AND EMITTED RFI BACK ONTO THE 28VDC LINE 20 D B ABOVE MIL-I-28600 SPECIFICATIONS IN A FREQUENCY RANGE OF .70 TO 4.0 MEGACYCLES. REF. 8/M 411-0501 T.M. NO 6.							
CORRECTIVE ACTION-CONTINUE TESTING THROUGH ENVIRONMENTAL VIBRATION PORTIONS. UNIT WILL THEN BE REPLACED WITH NEW UN IT INCORPORATING RFI FILTERING AND REGULATING AUDIO SUSCEPTIBILITY.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B COMPUTER	893533.1 CONVERTER AMPLIFIER	UTP-QUAL/PP1 7-04331-9	841125	CONVAIR	YES NO	YES CRESCENT NO 101120
<p>FAILURE MODE-STRUCTURAL. AFTER ONE HOUR AT -30 DEGREES C IN THE PPT TEMPERATURE-SHOCK TEST, A HAIRLINE CRACK AND PI WHOLE APPEARED IN THE POTTING COMPOUND. THE POTTING COMPOUND USED CAME FROM AN UNQUALIFIED SOURCE. REF. S/N 411-0301 T.M. NO.3</p> <p>CORRECTIVE ACTION-CONTINUE TEST. THE VENDOR WAS NOTIFIED AND HAS PURCHASED NEW POTTING COMPOUND FROM A QUALIFIED SOURCE FOR USE ON PRODUCTION UNITS.</p>						
P.U./LOADING-GDC-A/B COMPUTER	LV-99-20-293-F DEMULATOR ASSY.	FAR 7-43444-813	840117	FAC	YES NO	
<p>FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR FAULTY OUTPUT. FAILURE CONFIRMED AS CAUSED BY A CIRCUIT DEFECT</p> <p>CORRECTIVE ACTION-NONE. EXACT CAUSE OF TROUBLE COULD NOT BE ISOLATED.</p>						
P.U./LOADING-GDC-A/B COMPUTER	LV-99-20-280F CANISTER	FAR 7-43040-817	283-D 831015	FAC	YES NO	60/C
<p>FAILURE MODE-CONTAMINATION. UNIT WAS REJECTED FOR DEPOSITS OF FOREIGN MATERIAL VISIBLE ON OUTER SHELL OF CANISTER C ASHING. FAILURE WAS CONFIRMED THOUGH THE CONDITION IS NOT DETRIMENTAL. PROBABLE CAUSE DETERMINED TO BE INCOMPLETE CLEANING PROCEDURES DURING MP6.</p> <p>CORRECTIVE ACTION-MORE RIGID INSPECTION SURVEILLANCE IS BEING ENFORCED DURING CASTING SURFACE TREATMENT AND CLEANING.</p>						
P.J./LOADING-GDC-A/B COMPUTER	NZ-99-20-235-F PRESSURE CONTROL VALVE	FAR 59-40239-1	143D 830529	FAC	YES NO	ZERO 28P8-22
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE TO RELIEVE AT 5 PSIG. FAILURE WAS CO NFIRMED AS CAUSED BY RECENT 60/C DESIGN MODIFICATION.</p> <p>CORRECTIVE ACTION-MODIFIED VALVES WILL NOT BE USED IN ANY NEW DESIGN.</p>						

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P.U./LOADING-GDC-A/B COMPUTER	N2-99-20-238-F PRESSURE CONTROL VALVE	FAR 99-40259-1	890529	FAC	YES ZERO NO 28P6-822	895630
FAILURE MODE-FAIL TO OPERATE AT DESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE TO HOLD PRESSURE. FAILURE WAS CONFIRMED AS CAUSED BY IMPROPER ASSEMBLY.						
CORRECTIVE ACTION-VENDOR WAS CONTACTED REGARDING CONTROL OF DESIGN CONFIGURATION.						
P.U./LOADING-GDC-A/B COMPUTER	SP-99-20-242-F DEMULATOR ASSEMBLY	FAR 7-43444-819	890528	FACTORY	YES NO	895635
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR LOW OUTPUT.						
CORRECTIVE ACTION-NONE. FAILURE COULD NOT BE CONFIRMED.						
P.U./LOADING-GDC-A/B COMPUTER	SP-AS-20-234F POWER SUPPLY	FAR 7-04348F	1260 850518	FACTORY	YES ARMOUX NO PS-197	896373
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED FOR LOW OUTPUT. FAILURE WAS CONFIRMED AS CAUSED BY A BROKEN WIRE AND SUBSEQUENT ARCING WHICH FAILED A TANTALUM CAPACITOR.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GDC-A/B COMPUTER	WAE-36/A1-401-00-162	FLIGHT	182D 850213	A-1 O.	YES YES	896389
FAILURE MODE-OUT OF TOLERANCE. PROPELLANT CONSUMPTION WAS NOT AS PREDICTED. PROPELLANT RESIDUAL PREDICTION MAY HAVE BEEN IN ERROR. RESIDUALS ON FOUR PREVIOUS FLIGHTS WITH FIRED PU VALVES ALSO VARIED SUBSTANTIALLY FROM PREDICTED VALUES.						
SYSTEM EFFECT-OPERATION TOO HIGH. WITH A FIRED PU VALVE ANGLE OF 36.1 DEGREES, PREDICTED RESIDUAL WAS 300 POUNDS OF FUEL AT THEORETICAL LOX DEPLETION. FLIGHT DATA INDICATED A RESIDUAL OF 1286 POUNDS OF LOX AT THEORETICAL FUEL DEPLETION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-METHODS OF CALCULATING AND PREDICTING RESIDUALS WERE REFINED PLUS INCLUSION OF A COUNTDOWN HOLD TO ALLOW STABILIZATION OF THE LOX BULK DENSITY.						

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P.U./LOADING-GOC-A/B COMPUTER	SP-A9-20-151P DEMOMULATOR	FAR 27-43018-13	2150 820629	FACTORY	YES	GO/C NO	895571
FAILURE MODE-CONTAMINATION-P/U SET REPORTEDLY FAILED OUT OF TOLERANCE FOR ERROR DETECTOR OUTPUT VERSUS PRESSURE. TRAPPED MERCURY WAS FOUND IN THE FUEL VALVE PORT AND SLIGHT DROSS DEPOSIT ON THE FUEL MANDEL.							
CORRECTIVE ACTION-GD/C INITIATED TCP 8122 AND APPROVED BY AIR FORCE TO PROVIDE PROCEDURES AND HARDWARE TO PURGE MOISTURE FROM ALL PNEUMATIC LINES CONNECTING TO MANOMETERS.							
P.U./LOADING-GOC-A/B COMPUTER	SP-A9-20-138P DEMOMULATOR	FAR 27-43018-13	2150 820730	FACTORY	YES NO		895521
FAILURE MODE-OUT OF TOLERANCE-P/U SET REPORTEDLY FAILED FOR OUT OF TOLERANCE ERROR DETECTOR VOLTAGE IN FINAL CHECKOUT. THE FUEL MANOMETER DISPLAYED A SHIFT IN CAPACITANCE VALVE DUE TO MOISTURE PRESENT OF ONE OR BOTH OF THE MANOMETERS.							
CORRECTIVE ACTION-NO KNOWN CORRECTIVE ACTION TAKEN.							
P.U./LOADING-GOC-A/B COMPUTER	SP-9D-20-87P DEMOMULATOR	FAR 27-43018-13	114D 820100	NTR	YES NO	GO/C	895511
FAILURE MODE-OUT OF TOLERANCE-FAILED A BENCH TEST. TEST POINT 6 MEASURED OUT OF TOLERANCE. THE REPORTED FAILURE WAS NOT VERIFIED. OPERATION WAS NORMAL AND ALL EDO TEST POINTS WERE WITHIN TOLERANCE VALUES. UNIT FAILED DUE TO THE SETTING OF AN INCORRECT PRESSURE VALUE AT TEST POINT 6.							
CORRECTIVE ACTION-TMX VANUAN 2-010 STATED EACH SET IS TESTED THREE TIMES AFTER PURGING WHEN A QUESTIONABLE TEST POINT READING IS MADE, AND SPECIAL CARE OF TEST EQUIPMENT IS MAINTAINED. CHECKOUT PROCEDURE USED IS 27-94532-3A-1.							
P.U./LOADING-GOC-A/B COMPUTER	A-9F-20-110P RESISTOR-COMPUTER-P/U SYSTEM	FAR 27-43009-807	81108	WARREN	YES NO	GO/C	898183
FAILURE MODE-OUT OF TOLERANCE-P/U SET WAS REJECTED BECAUSE THE P/U VALVE ANGLE COULD NOT BE ADJUSTED. THE FAILURE WAS CAUSED BY A DEFECTIVE RESISTOR RESOR. FAILURE IMPLICATED IN THE FACTORY DURING ASSEMBLY.							
CORRECTIVE ACTION-INSPECTION PERSONNEL HAVE BEEN ALERTED TO THE PROBLEM AND WILL MONITOR SHOP OPERATIONS TO INSURE COMPLIANCE TO BLUEPRINT, ENGINEERING SPECIFICATION AND MANUFACTURING PROCESSES.							

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P.U./LOADING-GDC-A/B COMPUTER	A-9F-20-108F DEMODULATOR	FAR 27-43009-807	911027	WARREN	NO	GO/C YES	095104
FAILURE MODE-OUT OF TOLERANCE-P/U SET FAILED DURING MARCHE CHECK OF PROCEDURE 27-98240-1. FAILURE WAS NOT VERIFIED. PROBABLE CAUSE OF THE REPORTED FAILURE ARE A FAILURE IN THE CHECKOUT EQUIPMENT, OR HUMAN ERROR IN ADJUSTING, CALIBRATING OR TESTING THE PART. OTHER CASE REPORTED IN FAR A-9F-20-111F.							
CORRECTIVE ACTION-NONE-CORRECTIVE ACTION TAKEN.							
P.U./LOADING-GDC-A/B COMPUTER	A-9F-20-108F DEMODULATOR	FAR 27-43009-807	53E 610920	WARREN	NO	GO/C NO	095107
FAILURE MODE-OUT OF TOLERANCE-P/U SET. FAILED DURING MARCHE PROCEDURE 27-98219-3. FAILURE NOT VERIFIED ALL NORMAL FUNCTIONS OF THE SUBJECT P/U SET OPERATED SATISFACTORILY. THIS FAILURE WAS ATTRIBUTED TO EITHER A HUMAN OR CHECKOUT EQUIPMENT ERROR.							
CORRECTIVE ACTION-NONE-FAILURE WAS NOT VERIFIED.							
P.U./LOADING-GDC-A/B COMPUTER	9H-E7-064 RESISTOR	FAR 27-43009-807	45E 610710	FORBES	YES	GO/C NO	095438
FAILURE MODE-OUT OF TOLERANCE-THE SUBJECT UNIT REPORTEDLY FAILED TO POSITION THE P/U FUEL VALVE WHEN REEP ADJUSTMENT WAS VARIED. FAILURE WAS NOT VERIFIED.							
CORRECTIVE ACTION-NONE-FAILURE COULD NOT BE VERIFIED.							
P.U./LOADING-GDC-A/B COMPUTER	A-9B-20-073F DEMODULATOR	FAR 27-43009-807	610717	ETR	NO	GO/C YES	095510
FAILURE MODE-OUT OF TOLERANCE-EDO VOLTAGES AT TEST POINTS 8.0, 4.0 AND 0.0 WERE OUT OF TOLERANCE. ACTUAL FAILURE WAS NOT CONFIRMED SINCE ALL EDO TEST POINTS WERE FOUND TO BE WITHIN FIELD TOLERANCE LIMITS. FAILURE IS ATTRIBUTED TO ERROR IN COMPARING THE TEST VALUES WITH DOC. CHECKOUT LIMITS RATHER THAN FIELD LIMITS. ADDITIONALLY, A MALFUNCTION IN TEST EQUIPMENT MAY HAVE CONTRIBUTED TO AN UNCERTAINTY IN THE MEASURED READINGS.							
CORRECTIVE ACTION-FIELD PERSONNEL NOTIFIED OF CORRECT TOLERANCE LIMITS TO BE USED.							



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P.U./LOADING-GDC-A/B COMPUTER	98-20-038 DEMODULATOR-	FAR 27-43008-803	44E 810831	FORBES	YES	60/C NO	985437
FAILURE MODE-OUT OF TOLERANCE-TROUBLESHOOTING AT THE SITE SAVE THE ERROR DETECTOR OUTPUT AS OUT OF TOLERANCE IN THE POSITIVE DIRECTION. OTHER CASE REPORTED IN FAR 98-20-088.							
CORRECTIVE ACTION-NONE-FAILURE COULD NOT BE VERIFIED.							
P.U./LOADING-GDC-A/B COMPUTER	98-20-038 RESISTOR	FAR 27-43008-803	23E 810421	FORBES	NO	60/C NO	985334
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME-ADJUSTMENT OF R222 IN P/U VALVE CONTROLLER CANISTER FAILED TO PROVIDE ANY CHANGE IN VALVE POSITION. REPLACEMENT OF SUBJECT MATCHED SET PROVIDED VALVE CONTROL. FAILURE COULD NOT BE VERIFIED. POSSIBLE IN THE FIELD, THE USJ1 ELECTRICAL PLUG DID NOT MAINTAIN A POSITIVE CONTACT.							
CORRECTIVE ACTION-NONE-FAILURE COULD NOT BE VERIFIED.							
P.U./LOADING-GDC-A/B COMPUTER	98-20-038 DEMODULATOR-P/U.	FAR 27-43018-17	600728	ETR	YES	60/C NO	985429
FAILURE MODE-CONTAMINATION-DEMODULATOR OUTPUT WAS OUT OF TOLERANCE CONDITION, POSITIVE AT TEST POINTS 26 AND 27. CHARACTERISTICS OF DIELECTRIC COATING OF MANDEL CHANGE WITH HUMIDITY OR CONTAMINATION OF MERCURY AND ARE NOT UNIFORM.							
CORRECTIVE ACTION-60/C HAS TAKEN THE FOLLOWING ACTION-TOLERANCE FOR D SERIES IS WIDENED TO ALLOW FOR EXPECTED INITIAL DRIFT DUE TO CHANGES IN DIELECTRIC CHARACTERISTICS. P/U MATCHED SET IS NOT BEING USED FOR PROPELLANT TANKING ON E SERIES, THEREFORE, E SERIES TOLERANCE HAVE BEEN WIDENED FURTHER.							
P.U./LOADING-GDC-A/B COMPUTER	98-20-037 DEMODULATOR-P/U	FAR 27-43008-803	600728	ETR	YES	60/C NO	985430
FAILURE MODE-CONTAMINATION-DEMODULATOR OUTPUT WAS OUT OF TOLERANCE AT TEST POINTS 9, 15, 24, 25, 26 AND 27. THIS WAS DUE TO THE NON-UNIFORM DROSS WHICH DEPOSITED ON MANDEL DURING TESTING, CHANGING THE MANOMETER CAPACITANCES AND UNBALANCING THE BRIDGE. DROSS WAS RESULT OF CONTAMINATED MERCURY. PROTECTIVE COATING PT 803 HAD NOT BEEN APPLIED TO MANOMETER HOUSING.							
CORRECTIVE ACTION-THIS SET WAS MANUFACTURED BEFORE THE COATED HOUSINGS BECAME EFFECTIVE. HOUSINGS ARE TO BE COATED WHEN AND IF A P/U SET FAILS.							

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P.U./LOADING-GOC-A/B COMPUTER	ZC-7-223 P2-303-00-11 ERROR DEMODULATOR	FLIGHT	11C 890824	ETR LIFTOFF	YES NO		895687
FAILURE MODE-DRIFT. SHIFT OF ERROR DEMODULATOR OUTPUT SIGNAL OCCURRED AT LIFTOFF. NULL POSITION AFTER SHIFT APPARENTLY AT PLUS 1.6 VOLTS.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. EDO SIGNALS WERE INCORRECTLY OFFSET BY SHIFT CAUSING VALVE TO CLOSE AT VOLTS ABOVE 1.6 AND TO OPEN AT ALL VOLTAGES BELOW 1.6 VOLTS.							
VEHICLE EFFECT-NONE. EFFECT ON FLIGHT NOT DEFINED.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-98-20-3030-F TRANSISTOR	FAR 7-43040-933	850506	FACTORY	YES 60/C NO		895687
FAILURE MODE-OUT OF TOLERANCE-P/U COMPUTER COMPARTOR REPORTEDLY FAILED EDO VOLTAGE. READ MINUS 6 AND SPEC. REQUIREMENT IS MINUS 8. VOLTS. FAILURE RESULTED FROM A TRANSISTOR WITH AN EMITTER- TO-COLLECTOR BREAKDOWN VOLTAGE LOWER THAN NORMAL. THIS CONDITION DOES NOT AFFECT THE SYSTEM IN THE NORMAL CONDITION.							
CORRECTIVE ACTION-CHANGE IN EOP 330-141.1 ADDED A TEST FOR A MINIMUM EDO OF 6 VOLTS WITH THE MANOMETER CABLE DISCONNECTED. THIS WILL PREVENT P/U MATCHED SETS FROM BEING REJECTED FOR FAILING TO MEET THIS REQUIREMENT.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-98-20-3047 DEMOMULATOR	FAR 27-43040-333	850416	ETR	YES 60/C NO		895688
FAILURE MODE-OUT OF TOLERANCE-REPORTED FAILURE OF THIS P/U COMPUTER COMPARTOR WAS DISCOVERED DURING THE P/U VALVE ANGLE ADJUSTMENT. EDO VOLTAGE WAS MINUS 7.64 AND SPECIFICATION LIMIT IS MINUS 6 VOLTS MINIMUM. COMPUTER COMPARTOR IN MET ALL FACTORY REQUIREMENT IN ANALYSIS. HOWEVER, UNDER SPECIAL CONDITIONS OF SITE PROCEDURE ASSEMBLY FAILED.							
CORRECTIVE ACTION-CHANGE IN EOP 330-141.1 ADDED A TEST FOR A MINIMUM EDO OF 6 VOLTS WITH THE MANOMETER CABLE DISCONNECTED. THIS WILL PREVENT P/U MATCHED SETS FROM BEING REJECTED AT THE ETR FOR FAILING TO MEET THIS REQUIREMENT.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-98-20-3041-F CONVERTER AMPLIFIER	FAR 27-43016-38	1860 850218	ETR	YES 60/C NO		895688
FAILURE MODE-DRIFT-DURING A BELLOFF RUN THE VALVE POSITION WOULD DRIFT. FAILURE AS REPORTED COULD NOT BE DUPLICATED. HOWEVER, VALVE ANGLE POSITIONS OF THE SAME VALUE AS REPORTED WERE OBTAINED UNDER VARIOUS TESTING CONDITIONS. EXCESSIVE DRIFT IN THE NULL POINT OF THE SYSTEM OCCURRED THROUGHOUT THE TESTING. THIS ERRATIC OPERATION DISAPPEARED WHEN CONVERTER AMPLIFIER WAS REPLACED. POSSIBLY DUE TO AGING OF COMPONENTS SINCE UNIT WAS APPROXIMATELY SEVEN YEARS OLD.							

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CORRECTIVE ACTION-THIS CONVERTER AMPLIFIER CONFIGURATION IS TO BE REMOVE FROM ALL SYSTEMS AND REPLACED WITH A NEW DESIGN.							093981
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-98-20-3046-F ISOLATION AMPLIFIER	FAR 7-43446-807	641217	FACTORY	NO	60/C	093964
FAILURE MODE-ERRATIC OPERATION-ISOLATION AMPLIFIER DURING TESTING PER EOP 330-127 PARAGRAPH 4.3.1. OUTPUT WAS INTERMITTENT. FAILURE CONFIRMED. AMPLIFIER WAS IDENTIFIED AS A-807 CONFIGURATION HOWEVER, DEPOSITING SHOWED AMPLIFIER TO BE E-805 CONFIGURATION. AMPLIFIER WAS CHANGED TO A-807 CONFIGURATION AND RETESTED. FAILURE DID NOT RECUR.							
CORRECTIVE ACTION-A REQUEST WAS ISSUED, REQUESTING PRODUCTION AND PLANNING PROCEDURES BE REVIEWED TO PRECLUDE THE POSSIBILITY OF MISIDENTIFICATION OF THESE AMPLIFIERS, OR THE POSSIBILITY OF BUILDING THESE AMPLIFIERS TO THE WRONG CONFIGURATION.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	CT-98-20-038 CONVERTER AMPLIFIER	FAR 7-43040-823	1480 641214	ETR	YES	60/C NO	093983
FAILURE MODE-OUT OF TOLERANCE. P/U COMPUTER COMPARTOR FAILED DURING CHECKOUT PER PROCEDURE CTP-PU-0009. VALVE POSITION ANGLE READING OUT OF TOLERANCE. FAILURE WAS CAUSED BY A DEFECTIVE CONVERTER AMPLIFIER WHICH WAS TEMPERATURE SENSITIVE. ASSEMBLY BUILT IN 1958.							
CORRECTIVE ACTION-SINCE 1958 RIGID STANDARD FOR COMPONENTS HAVE BEEN ESTABLISHED AND ALL UNITS OF THIS CONFIGURATION HAVE BEEN REPLACED WITH A NEW DESIGN. NO ADDITIONAL CORRECTIVE ACTION WAS RECOMMENDED.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-98-20-3031-C AMPLIFIER	FAR 55-45005-8	1840 640930	FACTORY	YES	60/C NO	096002
FAILURE MODE-OUT OF TOLERANCE-P/U SET FAILED IN FINAL CHECKOUT AS ALL TEST POINTS WERE FOUND TO BE OUT OF TOLERANCE. THIS P/U SET WAS MARKED FOR TEST PURPOSE ONLY. TEST SETS ONLY CONTAIN CONVERTER AMPLIFIER MODULES P/M 7-04351-3 TH AT ARE NOT ACCEPTABLE FOR FLIGHT. REMAINDER OF SET HARDWARE ACCEPTABLE FOR FLIGHT AND ARE TO BE CONVERTED. ANALYSIS CANCELLED.							
CORRECTIVE ACTION-PERSONNEL RESPONSIBLE FOR THE DISPOSITION OF FAILED ITEMS ON THE CHECKOUT DOCKS WERE INFORMED THAT THE FAILURE OF THESE P/U MATCHED SETS IS TO BE CLASSIFIED AS A CRITICAL FAILURE OF FLIGHT HARDWARE REQUIRING FAILURE ANALYSIS. NO CORRECTIVE ACTION TAKEN.							

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P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-90-20-3034-F AMPLIFIER	FLIGHT 27-43018-23	640903	NTR	YES NO	YES 60/C
FAILURE MODE-ERRATIC OPERATION-DURING RUN OF PROCEDURE 27-944J3 EDO OF P/U SET FLUCTUATED BETWEEN 0 AND 10 VOLTS. A PROBLEM DISAPPEARED A HALF HOUR AFTER IT OCCURRED. FAILURE CONTINUED. INTERMITTENT FLUCTUATIONS IN EDO FROM 1 TO 2 VO LTS WERE MEASURED. FLUCTUATIONS IN EDO WERE A RESULT OF OSCILLATIONS IN THE ISOLATION AMPLIFIER. THE EXACT CAUSE OF THE FAILURE COULD NOT BE FOUND.						
CORRECTIVE ACTION-NO CORRECTIVE ACTION WAS TAKEN AS THE PRECISE CAUSE OF FAILURE COULD NOT BE FOUND.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3028-F TRANSISTOR-	FAR 7-43040-827	640828	FACTORY	YES NO	YES 60/C
FAILURE MODE-CONTAMINATION. P/U MATCHED SET WOULD NOT GIVE A NEGATIVE ERROR DEMODULATOR OUTPUT VOLTAGE INDICATION. SPEC. REQUIRES AN OUTPUT VOLTAGE FROM PLUS 13 TO MINUS 13 VOLTS DC. FAILURE WAS CAUSED BY A BASE- TO-COLLECTOR SHORT IN TRANSISTOR Q-304, A 2N44 TYPE. SHORT IN TRANSISTOR WAS CAUSED BY LOOSE METALLIC PARTICLES WITHIN THE TRANSISTOR CASE AND WERE IDENTIFIED AS WELD SPLASH.						
CORRECTIVE ACTION-SINCE THIS UNIT WAS BUILT, A 100-PERCENT X-RAY INSPECTION OF TRANSISTOR WAS INITIATED. THEREFORE NO ADDITIONAL CORRECTIVE ACTION WAS RECOMMENDED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3032-F TRANSISTOR-COMPUTER COMPARTOR AMP LIFTIER	FAR 27-43018-21	2890 640828	ETR	YES NO	YES 60/C
FAILURE MODE-OUT OF TOLERANCE-DURING CHECKOUT OF THE P/U SYSTEM, VALVE-POSITION VOLTAGE WAS HIGH WHEN THE VALVE WAS AT THE NOMINAL POSITION. FAILURE RESULTED FROM EXCESSIVE LEAKAGE CURRENT FROM THE MIXTURE RATIO-LIMITER TRANSISTOR Q-513. TRANSISTOR WAS INADVERTENTLY DAMAGED BEFORE THE ANALYSIS COULD BE COMPLETED.						
CORRECTIVE ACTION-SINCE THE CAUSE OF FAILURE OF THE TRANSISTOR COULD NOT BE FOUND, NO CORRECTIVE ACTION WAS TAKEN.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3030-F TRANSDUCER-	FAR 7-04342-3	2890 640819	FACTORY	YES NO	YES CRESNET ENGINE RT-22A-90B
FAILURE MODE-STRUCTURAL-TRANSDUCER REPORTEDLY FAILED WHEN ROUTINE ADJUSTMENT COULD NOT BE MADE IN THE NORMAL MANNER . THE WORM AND THE PINION GEARS WERE FOUND DAMAGED. ANALYSIS FOUND SHAFT WAS BENT AS A RESULT OF MISHANDLING.						
CORRECTIVE ACTION-60/C INFORMED APPROPRIATE PERSONNEL OF THE NECESSITY OF HANDLING ROTARY TRANSDUCERS PROPERLY. ECM						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
378549, CLC 43923, SPECIFIES THE MOUNTING AND ADJUSTMENT TECHNIQUE TO PREVENT BINDING OF THE WORM GEAR ADJUSTMENT.							896003
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-3023-F COMPUTER	FAR 7-43040-827	840819	FACTORY	YES	60/C NO	896006
FAILURE MODE-CONTAMINATION-P/U COMPUTER COMPARTOR REPORTEDLY FAILED. SEVERAL BEADS OF BRIGHT METALLIC MATTER, THOUGH TO BE MERCURY, BETWEEN TB-101 AND TB-105 AND IN HOLES FOR HOLDDOWN BOLTS OF THE CANISTER SHELL. REPORTED FAILURE DUE TO MERCURY CONTAMINATION WAS NOT CONFIRMED.							
CORRECTIVE ACTION-SINCE THE RESULT OF THE ANALYSIS INDICATED NO MERCURY WAS PRESENT IN THE COMPUTER COMPARTOR, NO CORRECTIVE ACTION WAS REQUIRED.							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-3028-C AMPLIFIER	FAR 7-43040-825	840730	FACTORY	YES	60/C NO	896004
FAILURE MODE-OUT OF TOLERANCE-COMPUTER COMPARTOR FAILED IN FACTORY DURING ELECTRICAL TESTING PER EOP 330-141-1. MAGNETIC AMPLIFIER P/N 7-04346 WAS REMOVED FROM THE COMPARTOR. THE COMPARTOR PASSED ALL TESTS. FAILURE ANALYSIS DID NOT DISCLOSE ANY PROBLEM IN AMPLIFIER. COMPUTER COMPARTOR PASSED ALL TESTS AFTER REPLACEMENT OF MAGNETIC AMPLIFIER.							
CORRECTIVE ACTION-NONE-FAILURE NOT CONFIRMED.							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-3018-F COMPUTER COMPARTOR-P/U SYSTEM	FAR 27-43016-21	2300 840723	ETR	NO	60/C YES	896208
FAILURE MODE-OUT OF TOLERANCE-DURING P/U SYSTEM CHECKOUT THE NOMINAL VALVE ANGLE WAS OUT OF TOLERANCE AND VALVE POSITION VOLTAGE WAS 0.05 VOLT HIGH. FAILURE CONFIRMED. HOWEVER THIS CONDITION DOES NOT CONSTITUTE A FAILURE OF THE P/U MATCHED SET. THEREFORE COMPUTER COMPARTOR FAILURE WAS NOT CONFIRMED. FAILURE WAS CAUSED BY A STICKING VALVE IN THE ENGINE.							
CORRECTIVE ACTION-TAKE NECESSARY ACTION TO HAVE CLARIFYING STATEMENTS ADDED TO EXISTING PROCEDURES TO ELIMINATE REJECTIONS OF P/U MATCHED SETS WHEN FAILURES ARE CAUSED BY STICKING VALVES IN THE ENGINE.							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	W/O/A 46493-001-18/PC-CO-01-0008-01 2 DEMODULATOR	COMPOSITE-FACTORY	2880 840716	FACTORY	NO	NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. TELMETRY MEASUREMENT UNIV, ERROR RATIO DEMODULATOR OUTPUT, INDICATED AN EXCESSIVE TIME INTERVAL IN PRESSURIZING FROM TEST POINT 88 TO TEST POINT 89. THE PROPELLANT UTILIZATION VALVE INDICATED SIMILAR RESPONSE.							

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CONVAIR DIVISION

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
SYSTEM EFFECT-OPERATION STARTS TOO LATE. VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TESTING REQUIRED. CORRECTIVE ACTION-THE MANOMETER PRESSURIZATION FEED RATE (AGE) WAS ADJUSTED.							000400
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3013-C AMPLIFIER	PAR 7-04351-3	940713	FACTORY	YES 60/C NO		000007
FAILURE MODE-OUT OF SPECIFICATION-REPORTED FAILURE OF THE CONVERTER AMPLIFIER WAS NO OUTPUT PRESENT DURING EOP 330-141.1 IN FACTORY AREA. AMPLIFIER TO BE USED FOR TEST PURPOSES ONLY.  CORRECTIVE ACTION-NONE. ANALYSIS CANCELLED.							000007
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	FTAB474/P2-JCO-04-230	COMPOSITE-J FACT	2500	ETR	NO NO		000007
FAILURE MODE-FAIL DURING OPERATION-AS THE RESULT OF A LOOSE COAX CABLE ON A SANDWICH PLUG, THE PU EDO MENT MORE POSITIVE WHEN SWITCHED FROM THE UPPER LIMIT TO LOWER LIMIT.  SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE PU EDO MENT MORE POSITIVE WHEN SWITCHED FROM UPPER LIMIT TO LOWER LIMIT DUE TO A LOOSE COAX CABLE ON A SANDWICH PLUG.  VEHICLE EFFECT-NONE.  CORRECTIVE ACTION-COAX CONNECTION TIGHTENED.							000007
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3017-F TRANSISTOR-AMPLIFIER	PAR 7-43040-025	940707	FACTORY	NO 60/C YES		000007
FAILURE MODE-OUT OF TOLERANCE-P/U COMPUTER COMPARTOR FAILURE REPORTED DURING FACTORY TESTING TO EOP 330-141.1. ERRATIC OPERATION OF THE ISOLATION AMPLIFIER WAS CAUSED BY TRANSISTORS THAT HAD BEEN DAMAGED BY EXCESSIVE VOLTAGE FROM THE POWER SUPPLY. THE ANALYSIS OF THE DEFECTIVE POWER SUPPLY IS DESCRIBED IN PAR LV-99-20-3018P.  CORRECTIVE ACTION-FAILURE OF THE ISOLATION AMPLIFIER DESCRIBED IN THIS REPORT IS A SECONDARY FAILURE, NO CORRECTIVE ACTION IS REQUIRED.							000007

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PR1 OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3015-F TRANSDUCER-SYS.	FAR 7-43440-803	2890 640702	FACTORY	YES	60/C NC	096210
FAILURE MODE-OUT OF TOLERANCE-TWO OF THESE TRANSDUCER ASSEMBLIES REPORTEDLY FAILED IN THE FACTORY WHEN THEY COULD NOT BE ADJUSTED DURING ROUTINE ADJUSTMENT OF THE P/U SET PER PROCEDURE 27-92022-E. FAILURES ARE ATTRIBUTED TO GALLING OF THE SHAFTS AND BEARINGS. TENDENCY OF TYPE-302 CR8 TO GALL IN CONTACT WITH ITSELF WAS A SIGNIFICANT AND CONTRIBUTING FACTOR IN THESE FAILURES.							
CORRECTIVE ACTION-60/C TOOK CORRECTIVE ACTION BY RELEASING CIC 43925 WHICH SPECIFIES A MOUNTING AND ADJUSTMENT TECHNIQUE TO PREVENT BINDING OF THE WORM GEAR ADJUSTMENT.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3011 AMPLIFIER-P/U SYS.	FAR 55-43005-9	1510 640810	FACTORY	YES	60/C NO	096089
FAILURE MODE-OUT OF TOLERANCE-DURING SYSTEM SET-UP OF THE P/U SYSTEM, THE VALVE ON THE SUSSTAINER ENGINE COULD NOT BE ADJUSTED TO ITS UPPER LIMIT 42.8 DEGREES. FAILURE WAS DUE TO A DEFECTIVE CONVERTER AMPLIFIER. FAILURE OF THE CONVERTER AMPLIFIER WAS CAUSED BY A DEFECTIVE SOLDER CONNECTION.							
CORRECTIVE ACTION-P/M 7-04351-3 CONVERTER AMPLIFIER WAS REPLACED BY THE P/M 7-04351-5 ARBY PURCHASED UNDER CONTRACT 5 REQUIRING UP-DATED SOLDERING SPECIFICATIONS.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	LV-99-20-3009F AMPLIFIER	FAR 7-43446-807	640529	FACTORY	YES	60/C NO	095720
FAILURE MODE-OUT OF TOLERANCE-AMPLIFIER FAILURE WAS REPORTEDLY FOUND IN FACTORY AREA DURING TESTS PER EOP 330-141.1 PARAGRAPH 5.3.1 WHEN READING WAS 12.84 VOLTS DC. FAILURE OF THE AMPLIFIER WAS MARGINAL AND CAUSED BY EXCESSIVE AMP LIFTER PHASE SHIFT. A PREVIOUS CHANGE IN THE ISOLATION AMPLIFIER DESIGN INCREASED THE PHASE SHIFT.							
CORRECTIVE ACTION-60/C TOOK CORRECTIVE ACTION, CHANGING EDO REQUIREMENTS TO PLUS 12.0 VOLTS. THIS WILL PREVENT REJECTION OF MARGINAL ISOLATION AMPLIFIERS, AND WILL STILL MAINTAIN A HIGH MARGIN OF SAFETY FOR THE EDO VOLTAGE LEVEL.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SLV-99-20-3007F AMPLIFIER-DIODE	FAR 7-04346	640527	FACTORY	YES	AIR PAX NO	
FAILURE MODE-CONTAMINATION-MAGNETIC AMPLIFIER REPORTEDLY FAILED DURING MANUFACTURING TESTING TO EOP 330-141.1 PARAGRAPH 5.7.1. FAILURE WAS CAUSED BY CURRENT LEAKAGE IN DIODE CR-4 TYPE IN 486. A CASE LEAK WAS ALSO FOUND IN THE DIODE. THE CRYSTAL SURFACE OF THE DIODE WAS MOISTURE CONTAMINATED.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-CHECKOUT PROCEDURES AT ETR TEST THE MAGNETIC AMPLIFIERS FOR CURRENT LEAKAGE IN THE DIODE.							999787
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-3008F AMPLIFIER	PAR 7-04346	640826	FACTORY	YES	AIR PAX NO	994996
FAILURE MODE-OUT OF TOLERANCE-MAGNETIC AMPLIFIER REPORTEDLY FAILED DURING MANUFACTURING TESTING TO EOP 330.141.1 PA RAGRAM 3.7.1. FAILURE WAS NOT CONFIRMED. COMPUTER COMPARTOR COULD NOT BE OBTAINED FOR ANALYSIS.							
CORRECTIVE ACTION-NONE-NO CORRECTIVE ACTION COULD BE TAKEN.							999788
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-3003F CONNECTOR-DEMULATOR	PAR 7-43040-93	640506	FACTORY	YES	60/C NO	
FAILURE MODE-OUT OF SPECIFICATION-CONNECTOR ASSY REPORTEDLY FAILED DURING MANUFACTURING TESTING OF THE DEMULATOR ASSEMBLY. FAILURE WAS CAUSED BY A SOLDER RUN. THE SOLDER RUN WAS CAUSED BY AN EXCESS OF SOLDER OR AN EXCESS OF HEAT DURING SOLDERING OF THE GLASS-BEND ASSY TO THE CONNECTOR CASE. CONNECTOR DID NOT GO THROUGH RECEIVING INSPECTION AT 60/C.							
CORRECTIVE ACTION-NONE.							999789
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-3008C AMPLIFIER	PAR 7-43040-919	640406	FACTORY	YES	60/C NO	
FAILURE MODE-OUT OF SPECIFICATION-ISOLATION AMPLIFIER AND COMPUTER COMPARTOR WERE REJECTED FOR REPORTEDLY FAILING FACTORY TESTING. FAILURE ANALYSIS OF THE COMPUTER COMPARTOR AND ISOLATION-AMPLIFIER WAS CANCELED, AS THEY ARE ASSIG NED TO A PROGRAM HAVING NO CONTRACTUAL COVERAGE.							
CORRECTIVE ACTION-NO ACTION TAKEN.							999672
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-296F MAGNETIC AMPLIFIER	PAR 7-04346	640808	PAC	YES	AIRPAX NO	
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED FOR EXCESSIVE OUTPUT OF DC VOLTAGE. FAILURE WAS CONFIRMED AS C AUSED BY EXCESSIVE REVERSE LEAKAGE OF DIODE CR-8.							
CORRECTIVE ACTION-NONE. THIS IS FIRST FAILURE DUE TO FAULTY DIODE, HOWEVER TREND REPORTS WILL BE MONITORED FOR FUTU RE FAILURES OF SEMICONDUCTORS.							



GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AINSORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-99-20-297F MAGNETIC AMPLIFIER	FAR 7-04346	640124	FAC	YES	AIRPAX NO
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED DUE TO REPORTED HIGH GAIN. FAILURE WAS CONFIRMED BUT CAUSE WAS NOT DETERMINED BECAUSE OF INADVERTANT DESTRUCTION.						
CORRECTIVE ACTION-NONE. CAUSE OF FAILURE COULD NOT BE DETERMINED BECAUSE OF INADVERTANT DESTRUCTION OF THE UNIT.						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AGU83-001-2/FC-CO-01-0008-002 REGULATOR	COMPOSITE-FACTORY	2500	FACTORY	NO	NO
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT COMPOSITE DELAYED.						
CORRECTIVE ACTION-THE PNEUMATIC PRESSURE REGULATOR WAS REVALIDATED.						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-90-20-268F DEMODULATOR	FAR 27-43018-23	631216	WTR	YES	NO
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED DURING CHECKOUT.						
CORRECTIVE ACTION-NONE-FAILURE WAS NOT CONFIRMED.						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	LV-90-20-279-F COMPARATOR	FAR 27-43018-23	330-0 63119	WTR	NO	60/C NO
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED FOR A VARIATION IN ERROR-DETECTOR OUTPUT VOLTAGE. VARIATION WAS CORRECTED THROUGH ADJUSTMENT.						
CORRECTIVE ACTION-NONE. FAILURE NOT CONFIRMED.						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	CT-99-20-024-F AMPLIFIER	FAR 7-43040-819	631025	FACTORY	NO	60/C NO
FAILURE MODE-OUT OF TOLERANCE. PER EOP 330.141.1. FAILURE NOT CONFIRMED. AN IMPROPER TEST PROCEDURE PRODUCED THE FAILURE SYMPTOMS.						

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIF DATA SOURCE	VEHICLE	SITE	PRI	VENDOR NAME
SLG-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE DIF	TIME DIF	OTH	VENDOR PART NO
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. EOP 330-141.1, PARAGRAPH 9, WAS CHANGED. THIS PROVIDES THAT TERMINAL 1, TH E AMPLIFIER INPUT, OF THE CONVERTER AMPLIFIER MODULE BE GROUNDED BEFORE THE BALANCING TRANSDUCER TEST IS PERFORMED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SP-49-20-287-F CONVERTER AMPLIFIER	FAR 27-43018-23	227-D 631015	FAC	YES NO	60/C
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE TO CONTROL THE PU VALVE. FAILURE WAS CONFIRMED AS CAUSED BY A FAULTY CONVERTER AMPLIFIER RESULTING FROM A 10 OHM SHORT CIRCUIT BETWEEN PRIMARY AND SECONDARY WINDINGS OF TRANSFORMER T-4.						
CORRECTIVE ACTION-NONE. THIS FAILURE OCCURRED IN A PART NO LONGER BEING MANUFACTURED AND REPRESENTS A SINGLE FAILURE OUT OF A LARGE PRODUCTION LOT. NO CORRECTIVE ACTION RECOMMENDED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SP-49-20-271F AMPLIFIER DIODE	FAR 27-43018-21	218D 631010	FAC	YES NO	60/C
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. UNIT WAS REJECTED DUE TO EXCESSIVE VALVE POSITIONING VOLTAGE. FAILURE WAS CONFIRMED AS CAUSED BY A FAULTY CONVERTER AMPLIFIER RESULTING FROM A DEFECTIVE ZENER DIODE.						
CORRECTIVE ACTION-NEW DESIGNS FOR THE FAILED UNIT HAVE BEEN AUTHORIZED TO PROTECT COMPONENTS FROM DAMAGING TRANSIENT VOLTAGES.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SP-99-20-289F PROPELLANT UTILIZATION COMPUTER CO INPARATOR	FAR 7-43040-828	218D 631008	FAC	NO NO	60/C
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. UNIT WAS REJECTED FOR LOW VOLTAGE OUTPUT. DETERMINED TO BE A FAULTY TEST SET.						
CORRECTIVE ACTION-NONE. FAILURE WAS NOT CONFIRMED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SP-99-20-272F CONVERTER AMPLIFIER TRANSISTOR	FAR 7-04381-3	198D 631004	FAC	YES NO	CRESCENT
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED FOR EXCESSIVE VOLTAGE OUTPUT. FAILURE WAS CONFIRMED AS CAUSED BY FAILED TRANSISTOR 6-8 AND ZENER DIODE CR-3.						

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SYS CM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-NEW AUTHORIZED DESIGN WILL PROVIDE FOR CIRCUIT PROTECTION.							093040
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	LV-99-20-274-F CONNECTOR-ELECT.	FAR 27-43016-21	030930	FAC	YES NO	60/C	093049
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED AFTER IT WOULD NOT ADJUST PROPERLY. FAILURE WAS CONFIRMED AS A FAULTY COAXIAL CONNECTOR IN THE COMPUTER COMPARTOR.							
CORRECTIVE ACTION-INSPECTION PLANNING WAS REVISED TO INCLUDE INSULATION RESISTANCE CHECKS AT SUBASSEMBLY LEVEL.							093053
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	SP-A9-20-282-F COMPUTER COMPARTOR	FAR 27-43016-23	2030 030921	FAC	YES NO	60/C	
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED WHEN COMPUTER COMPARTOR COULD NOT BE ADJUSTED WITHIN TOLERANCE. FAILURE WAS NOT CONFIRMED. IDENTICAL FAILURE REPORTED ON FAR SP-A9-20-284-F FAILURE WAS TRACED TO CONNECTING ELECTRICAL HARNESS.							
CORRECTIVE ACTION-NONE.							093097
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	SP-A9-20-281-F PROPELLANT UTILIZATION COMPUTER CO MPARTOR	FAR 7-43040-823	199-D 030916	FAC	YES NO	60/C	
FAILURE MODE-OUT OF TOLERANCE. WAS REJECTED DUE TO EXCESSIVE VOLTAGE AND CURRENT OUTPUT TO PU VALVE. FAILURE WAS NOT CONFIRMED.							
CORRECTIVE ACTION-NONE, FAILURE WAS NOT CONFIRMED.							093060
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	SP-A9-20-234F AMPLIFIER	FAR 55-43003-9	133F 030814	FAC	YES NO	60/C	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE TO CONTROL THE PU VALVE. FAILURE WAS CONFIRMED AS CAUSED BY A FAULTY CONVERTER AMPLIFIER RESULTING FROM POSSIBLE TRANSIENT VOLTAGE SPIKE.							
CORRECTIVE ACTION-PRODUCTION FACILITIES ARE BEING EQUIPPED WITH VOLTAGE MONITORS. VENDOR AND 60/C ARE EVALUATING DESIGN CHANGES TO INCREASE POWER RATING OF FAILED TRANSISTOR.							

GENERAL DYNAMICS  
CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	SP-99-20-243-F CONVERTER AMPLIFIER	FAR 7-04331-3	630708	WTR	YES	CRESCENT NO	896834
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR HIGH DC VOLTAGE OUT PUT. FAILURE WAS CONFIRMED AS SLIGHT DRIFT IN COMPONENT OUT PUT. LIMITS ARE 2.565 TO 2.688 VOLTS DC. OUTPUT WAS 2.95 VOLTS DC.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	HC-A9-20-194F COMPUTER	FAR 27-43016-13	1300	FACTORY	NO	50/C YES	893707
FAILURE MODE-OUT OF SPECIFICATION-P/U SET ROUTED TO FAILURE ANALYSIS TO DETERMINE IF DAMAGE HAD OCCURRED TO THE COMPUTER COMPARTOR AS RESULT OF A FAILURE INVOLVING THE THREE-PHASE POWER SUPPLY OF MISSILE 1300. P/U SET WAS NOT DAMAGED IN ANY WAY BY THE POWER FAILURE.							
CORRECTIVE ACTION-NONE. NO DAMAGE TO P/U SET.							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	SP-99-20-244F ISOLATION AMPLIFIER	FAR 7-43446-807	630531	FAC	YES	NO	893068
FAILURE MODE-OUT OF TOLERANCE. TWO UNITS WERE REJECTED FOR LOW OUTPUT. FAILURES WERE CONFIRMED AND RESULTED FROM IMPROPER BIAS CONDITION IN THE AMPLIFIERS.							
CORRECTIVE ACTION-CHECKOUT E.O.P. WAS CHANGED TO ASSURE THAT PROPER BIAS CONDITIONS EXIST. INPUT TO AMPLIFIER WAS INCREASED FROM 1.0 TO 1.2 VOLTS.							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	A9-20-231F TRANSISTOR	FAR	128-D 630523	FACTORY	NO	CRESCENT ENGINE NO	894036
FAILURE MODE-OUT OF SPECIFICATION-WOULD NOT CONTROL VALVE ANGLE DURING VEHICLE CHECKOUT. FAILURE ANALYSIS FOUND TRANSISTOR 8-8 AND ZENER DIODE CR-8 DAMAGED. CAUSE WAS MOST LIKELY VOLTAGE TRANSIENTS OF THE 28 VOLTS.							
CORRECTIVE ACTION-A REPLY FROM CRESCENT ENG. CO. IN ANSWER TO VCAR 4311-83 STATES, THAT TRANSISTOR 8-8 WAS REPLACED WITH A TRANSISTOR HAVING A MUCH HIGHER CURRENT, VOLTAGE AND POWER RATING, EFFECTIVE 30 JULY 1963.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AD83-0066/DA922/L2-4MO-03-119 ERROR-DEMULATOR UNIT	COMPOSITE-FRD/DPL	119D 830423	WTR	YES NO		896763
<p>FAILURE MODE-PREATURE OPERATION. PREATURE ERROR DEMULATOR OUTPUT INDICATED 90 PCT. LOX LOAD WAS COMPLETE.</p> <p>SYSTEM EFFECT-TANKING OPERATION TOO LONG. CAUSED LOX RAPID LOAD TO 90 PCT. PROBE TO BE PREMATURELY TERMINATED. RESU LYING IN FINE LOAD TANKING ONLY.</p> <p>VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAY.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AD83-0066/DA922/L2-4MO-04-119	COMPOSITE-FRD/DPL	119D 830423	PALC 1-2	YES NO		897372
<p>FAILURE MODE-ERRATIC OPERATION. AFTER COMMIT STOP EDO VOLTAGE ROSE FROM PLUS ONE VOLT TO PLUS 13.2 VOLTS. AFTER A P NEUMATICS PHASE THREE PRESSURIZATION SEQUENCE USING EMERGENCY PCU, THE EDO VOLTAGE BECAME ERRATIC. EDO REMAINED BETW EEN MINUS 10 AND MINUS 15 VOLTS UNTIL END OF TEST.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-P.U. MATCHED SET CHANGED, BUBBLER VALVES REPLACED, AND P.U. SYSTEM LEAKS WERE REPAIRED.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AD83-0066/DA922/L2-4MO-03-119	COMPOSITE-FRD/DPL	119D 830423	PALC1-2	YES NO		897371
<p>FAILURE MODE-ERRATIC OPERATION. AT END OF COMMIT SEQUENCE THE EDO VOLTAGE WENT FROM PLUS ONE VOLT TO PLUS 2.5 VOLTS BECAME ERRATIC AND STABILIZED AT MINUS 12 VOLTS AFTER PROPELLANT DRAIN.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-P.U. MATCHED SET REPLACED.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	9D-20-239F DEMULATOR RESISTOR	FAR 27-43018-19	190-D 830423	WTR	NO NO		
<p>FAILURE MODE-OUT OF TOLERANCE PER PROCEDURE 27-98112 WHEN RESISTOR R-404 WAS FOUND BURNED FROM 1000 OHMS TO A 2 OHM SHORT. CAUSE IS SUSPECTED FROM A EXTERNAL POWER SOURCE APPLIED TO PIN 6 OF J-108, OR PIN 7 OF J-105. THIS PORTION I S USED FOR MONITORING OF VALVE CURRENT.</p>							

18 JUN 1966

GENERAL INICS  
CONVAIR DIVISION

## DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-NONE. ATTEMPTS WERE MADE TO DETERMINE WHEN AND HOW EXTERNAL POWER COULD HAVE BEEN INADVERTANTLY APPLIED TO THE FAILED UNIT.							893090
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	AD63-0088/DA92E/LB-4HO-02-119 DEMOMULATOR	COMPOSITE-FRD/DPL	119D 830423	PALC 1-2	YES NO		893373
FAILURE MODE-FARATIC OPERATION-ERROR DEMOMULATOR OUTPUT VOLTAGE VARIED FROM PLUS 13.5 VOLTS TO MINUS 14.5 VOLTS THRU OUGH TWO COMMIT SEQUENCES.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-P.U. MATCHED SET REPLACED. SUBSEQUENT MANOMETER BRIDGE TESTS REVEALED NO MALFUNCTION.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	AD63-0088/DA92E/LB-4HO-02-119 ERROR-DEMOMULATOR UNIT	COMPOSITE-FRD/DPL	119D 830423	WTR	YES NO		896300
FAILURE MODE-PREATURE OPERATION. PREATURE ERROR DEMOMULATOR OUTPUT INDICATED 90 PCT. LOX LOAD WAS COMPLETE.							
SYSTEM EFFECT-TANKING OPERATION TOO LOW. CAUSED LOX RAPID LOAD TO 90 PCT. PROBE TO BE PREMATURELY TERMINATED RESULTING IN FINE LOAD TANKING ONLY.							
VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAY.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	US-20-227F CANISTER	FAR 7-43040-819	830413	FACTORY	YES NO		896083
FAILURE MODE-CONTAMINATION. OUT OF TOLERANCE FOR PRESENCE OF MERCURY VAPOR WHEN TESTED PER MS21-13.4. CONFIRMED BY PRESENCE OF MERCURY PARTICLES. APPARENT HUMAN INITIATED ERROR.							
CORRECTIVE ACTION-PROCEDURES WERE REVIEWED AND FOUND TO BE ADEQUATE. PERSONNEL WERE CAUTIONED AGAIN.							
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	AL63-0003-197D/FC-CO-01-0081-001 VALVE	COMPOSITE-FACTORY	197C 830404	FACTORY	YES NO		
FAILURE MODE-FAIL DURING OPERATION. TELEMETRY DATA INDICATED THAT THE PROPELLANT UTILIZATION FUEL VALVE WENT FULL OPEN AT 7 PLUS 7 SECONDS (1726) DUE TO LOSS OF EXCITATION FROM THE FEEDBACK TRANSDUCER BRIDGE WHICH OPENED THE SERVO LOOP.							
SYSTEM EFFECT-ERRATIC OPERATION.							

GENERAL DYNAMICS  
CORPORATION DIVISION

**SUFFICIENT REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE**

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	JIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI VENDOR PART NO
VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. SYSTEM LEVEL AND COMPOSITE RETESTS REQUIRED.					
CORRECTIVE ACTION-REPLACED MATCHED SET.					
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	99-20-233F CONVERTER AMPLIFIER	FAR 7-43040-821	830322	FACTORY	YES NO
FAILURE MODE-FAIL DURING OPERATION. NO OUTPUT FROM THE CONVERTER AMPLIFIER DURING FACTORY TEST PER PROCEDURE 830.14 1.1 PAR 6.3.1. PROBABLY CAUSED BY FAILURE OF TRANSISTOR 8-9 FROM VOLTAGE TRANSIENT OF 20V DC SUPPLY, OR FROM A DEFECT WITHIN THE TRANSISTOR. UNIT 3/N 008/0076.					
CORRECTIVE ACTION-WEAR 4311-73 STATES THAT THE VENDOR, CRESCENT ENG. CO., REPLACED TRANSISTOR 8-8 WITH ONE HAVING A MUCH HIGHER RATING EFFECTIVE ON 3/N 17823, JULY 1965.					
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	SP-AS-20-224-F TRANSDUCER FUNCTIONAL	FAR 7-43040-821	750 830322	FACTORY	NO NO
FAILURE MODE-OUT-OF-TOLERANCE. FAILURE TRACED TO ROCKETDYNE TRANSDUCER. THIS FAILURE WAS SECONDARY.					
CORRECTIVE ACTION-UNKNOWN.					
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	HC-98-20-218F COMPUTER-COMPARATOR	FAR 27-43018-13	1300 830318	ETR	NO NO
FAILURE MODE-CONTAMINATION. FAILURE NOT CONFIRMED BUT A CHANGE IN CAPACITANCE HAD OCCURRED DUE TO MOISTURE IN MANDREL.					
CORRECTIVE ACTION-TCP 8122 WAS APPROVED TO PROVIDE PROCEDURES AND HARDWARE TO PURGE P.U. SYSTEMS LINES.					
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	A-99-20-223-F DEMODULATOR TRANSISTOR	FAR 7-43444-815	1830 830303	FACTORY	NO NO
FAILURE MODE-ELECTRICAL SHORT. FAILURE TRACED TO 4 SHORTED TRANSISTORS IN DEMOD. CAUSE TRACED TO EXCESSIVE VOLTAGE APPLICATION.					
CORRECTIVE ACTION-NONE.					

GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GOC-A/B COMPUTER COMPARATOR	99-20-218P DEMOMULATOR-WIRING	FAR 7-43444-813	830220	FACTORY	YES	GDC NO
FAILURE MODE-OUT OF TOLERANCE READINGS DURING MANUFACTURING TEST PER EOP 330.139. CAUSE DUE TO IMPROPER SOLDERED CONNECTION BETWEEN TERMINALS 4 AND 8.						
CORRECTIVE ACTION-UNKNOWN. SHOP AND INSPECTION PERSONNEL WERE NOTIFIED OF THIS FAILURE AND THE NEED FOR CLOSER SURVEILLANCE.						
P.U./LOADING-GOC-A/B COMPUTER COMPARATOR	A763-0003-1390/PC-CO-01-0006-019 ERROR DEMOMULATOR	COMPOSITE-FACTORY	1390	FACTORY	NO	GDC NO
FAILURE MODE-OUT OF TOLERANCE. MEASUREMENT UNIV, ERROR RATIO DEMOMULATOR OUTPUT, WENT OFF BAND DURING PRESSURIZATION OF TEST POINT NO. 20. DUE TO EXCESSIVE PNEUMATIC PRESSURE FLOW RATE IN THE AGE.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TESTING REQUIRED.						
CORRECTIVE ACTION-THE MEDIUM VALVE CONTROL #134 WAS READJUSTED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARATOR	CT-99-20-018-1 CANISTER PRESSURE CONTROL VALVE	FAR 98-30900-180	830185	FACTORY	NO	YES ZERO MP6 CO
FAILURE MODE-FAIL DURING OPERATION. VALVE WAS FOUND TO BE INOPERATIVE. VALVE USED ON SERVOMULTIPLIER FILTER CANISTER AS WELL AS P/U CANISTER TO CONTROL CANISTER PRESSURIZATION.						
CORRECTIVE ACTION-NONE. REASON FOR FAILURE NOT KNOWN BECAUSE FAILURE ANALYSIS WAS NEVER COMPLETED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARATOR	A583-0003-1300/PC-CO-02-0004-022 ERROR DEMOMULATOR	COMPOSITE-FACTORY	1300	FACTORY	NO	NO
FAILURE MODE-FAIL DURING OPERATION. TELEMETRY MEASUREMENT UNIV (ERROR RATIO DEMOMULATOR OUTPUT) INDICATED AN INCREASE IN LEVEL FROM PLUS 0.22 VDC (42 PERCENT ISM) TO PLUS 13.30 VDC (78 PERCENT ISM) FROM 213 TO 222 SECONDS. AT 222 SECONDS THE LEVEL DROPPED AND STABILIZED AT MINUS 1.83 VDC (37 PERCENT ISM). THE CAUSE WAS DETERMINED TO BE A DROP AND RECOVERY OF PNEUMATIC PRESSURE CONTROLLED BY THE TEST EQUIPMENT.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TESTING REQUIRED.						
CORRECTIVE ACTION-THIS ANOMALY WAS SIMULATED DURING TROUBLE-SHOOTING. COMPOSITE RETEST VERIFIED SYSTEM INTEGRITY.						



GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-198F DEMULATOR	FAR 7-43040	630116	FACTORY	YES NO	YES 60/C NO
FAILURE MODE-OUT OF TOLERANCE-UNIT FAILED TO READ 12 VOLTS DC AS SPECIFIED BY PARAGRAPH 4.7.1 OF EOP 330-139. THE REPORTED FAILURE OF THE DEMULATOR ASSEMBLY WAS NOT CONFIRMED.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED AND NO CORRECTIVE ACTION WAS RECOMMENDED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	2P-90-20-202-F AMPLIFIER	FAR 27-43016-19	630109	WTR	YES 60/C NO	YES 60/C NO
FAILURE MODE-OUT OF TOLERANCE. CAUSE TRACED TO CIRCUIT MODIFICATION ON SETS 2H 10401 THRU 10431, 13763 THRU 13789 A NO 13139. HUMAN ERROR.						
CORRECTIVE ACTION-SURVEY 8-83 LOCATED ALL DEFECTIVE CONVERTER AMP. AND ONLY 3M. WITH 18000 SERIES TO BE USED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	ME-99-14-194-C COAXIAL CABLE SHIELD	FAR 27-43059-3	130-D 621226	FACTORY	YES 60/C NO	YES 60/C NO
FAILURE MODE-STRUCTURAL-INSULATION OVER COAXIAL SHIELD WAS DAMAGED WHERE CABLE COMES OUT OF CAPACITANCE UNIT.						
CORRECTIVE ACTION-DEGREE OF DAMAGE NOT SUFFICIENT TO WARRANT CORRECTIVE ACTION.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-JA-198F HUMIDITY INDICATOR-CANISTER	FAR 7-03307	621218	FACTORY	YES NO	YES HUMIDIAL NO
FAILURE MODE-OUT OF SPECIFICATION-HUMIDITY INDICATOR REPORTEDLY FAILED WHEN AFTER PURSUING PER WPS 21-13 THE INDICATOR DID NOT RETAIN ITS BLUE-SAFE COLOR. FUNCTIONAL TESTING DID NOT CONFIRM THE REPORTED FAILURE. HOWEVER, AT THE HIGH RANGE LIMIT, 44 PERCENT RELATIVE HUMIDITY, THE INDICATOR EXCEEDED THE MANUFACTURERS TOLERANCE LIMIT OF PLUS OR MINUS 5 PERCENT.						
CORRECTIVE ACTION-60/C TOOK CORRECTIVE ACTION BY PREPARING AND SUBMITTING TCP 1470 TO AIR FORCE FOR APPROVAL AND WAS ACCEPTED. TCP SETS FORTH A RECOMMENDED TESTING PROCEDURE TO BE PERFORMED AT 60/C TO ESTABLISH RELATIVE HUMIDITY INDICATORS.						

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CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-189P COMPUTER COMPARTOR-P/U SYSTEM	FAR 7-43040-8.9	621129	FACTORY	YES NO	YES 60/C
FAILURE MODE-CONTAMINATION-FAILED TO PASS THE MERCURY VAPOR TEST USING SELENIUM SULPHIDE PAPER. MERCURY WAS MOST PROBABLY INTRODUCED DURING THE LEAK TEST IN WHICH ANY DETECTOR PRESSURE CHANGE WAS MEASURED WITH A MANOMETER. THIS MET MOD WAS STILL BEING USED WHEN THIS SET WAS LEAK TESTED.						
CORRECTIVE ACTION-MERCURY MANOMETER IN 60/C MANUFACTURING AND PRODUCT SUPPORT AREAS WERE REPLACED WITH GAGE TYPE PR ESURE INDICATORS.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-189P AMP-LIFIER	FAR 7-24346	621123	FACTORY	YES NO	YES 60/C
FAILURE MODE-OUT OF TOLERANCE-AMPLIFIER REPORTEDLY FAILED WHEN THE HALL VOLTAGE WAS FOUND TO EXCEED 2.5 VOLTS DC. CAUSE OF FAILURE COULD NOT BE DETERMINED BECAUSE OF THE DAMAGED WINDINGS. ATTEMPT WAS MADE TO DE-POT THE UNIT BUT THE COILS WERE DAMAGED IN THE PROCESS. DIODES AND RESISTORS IN UNIT ALL CHECKED SATISFACTORILY.						
CORRECTIVE ACTION-SINCE THE CAUSE OF FAILURE COULD NOT BE DETERMINED AND INFORMATION RAR WAS SENT TO THE VENDOR TO INFORM HIM OF THE FAILURE.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-189P AMPLIFIER	FAR 7-04346	621119	FACTORY	YES NO	YES 60/C
FAILURE MODE-OUT OF TOLERANCE-AMPLIFIER REPORTEDLY FAILED FOR HAVING EXCESS OFFSET VOLTAGE. FAILURE WAS NOT CONFIRMED. ANOTHER AMPLIFIER WAS REJECTED FROM SAME PACKAGE. SEE FAR A-99-20-189P.						
CORRECTIVE ACTION-NO ACTION AS FAILURE WAS NOT VERIFIED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-204-P CANISTER	FAR 27-43008-3	621103	FACTORY	YES NO	YES 60/C
FAILURE MODE-LEAK EXTERNAL. R. B. ASSY 100-00099 WOULD NOT HOLD PURGE MORE THAN A FEW DAYS. UNITS WOULD HAVE EXCESSIVE MOISTURE.						
CORRECTIVE ACTION-TCP 1470 INITIATED TO ADD RELATIVE HUMIDITY INDICATORS. AF DID APPROVE TCP.						

GENERAL DYNAMICS  
CONVAIR DIVISION

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-104-F CANISTER	FAR 27-43008-3	621105	FACTORY	YES	60/C NO
FAILURE MODE-LEAK-EXTERNAL. R. O. ASSY SM 112-0105 WOULD NOT HOLD PURGE MORE THAN A FEW DAYS. UNITS WOULD HAVE EXCESSIVE MOISTURE.						
CORRECTIVE ACTION-TCP 1470 INITIATED TO ADD RELATIVE HUMIDITY INDICATORS. AF DID APPROVE TCP.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-180F AMPLIFIER	FAR 7-43446-907	621025	FACTORY	YES	60/C NO
FAILURE MODE-OUT OF SPECIFICATION-THE REPORTED FAILURE OF AMPLIFIER WAS WHEN IT FAILED TO PASS THE REQUIREMENTS OF PARAGRAPH 5.3.1 OF EOP 330.141-1. FAILURE WAS DUE TO IMPROPERLY APPLIED COATING OF CONDUCTIVE PAINT HAVING A HIGH RESISTANCE. THIS REDUCED THE SHIELDING PROPERTIES OF THE COATING, AND ALLOWED A HIGH FREQUENCY OSCILLATION TO DEVELOPE. THIS HIGH FREQUENCY OSCILLATION DID NOT AFFECT OPERATION OF THE CIRCUIT, BUT MADE IT IMPOSSIBLE TO OBTAIN A VALID READING FROM THE TEST EQUIPMENT.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SP-98-20-191F DEMODULATOR	FAR 27-43016-13	2150 621017	ETH	YES	60/C NO
FAILURE MODE-OUT OF TOLERANCE-P/U SET REPORTEDLY FAILED DURING FUEL TANKING PROCEDURE. AT FLIGHT LEVEL THE ERROR DE MODULATOR OUTPUT VOLTAGE WAS MINUS 0.45 INSTEAD OF PLUS 1.5. FAILURE COULD NOT BE VERIFIED AT ETR P/U LABORATORY.						
CORRECTIVE ACTION-NO CORRECTIVE ACTION INDICATED.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	H6-98-20-195F CIRCUIT BOARD	FAR 27-43058-3	621001	ETR	NO	60/C NO
FAILURE MODE-OUT OF SPECIFICATION-CAPACITANCE PAD WAS REJECTED WHEN CRACKS WERE DISCOVERED IN POTTING ASSEMBLY. THIS PAD WAS PREVIOUSLY REMOVED FROM MISSILE 1150 BECAUSE OF MOISTURE PROBLEMS. THE FAILURE WAS NOT CONFIRMED. MOST PROBABLE CAUSE OF REPORTED FAILURE WAS MOISTURE IN OTHER PARTS OF SYSTEM. TROUBLE STILL PRESENT IN SYSTEM WHEN REPLACED WITH ANOTHER CAPACITANCE PAD.						
CORRECTIVE ACTION-NO CORRECTIVE ACTION INDICATED.						

GENERAL DYNAMICS  
CONVAIR DIVISION

**DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE**

SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-99-20-181F DEMODULATOR	FAR 7-43040-813	620814	FACTORY	NO	60/C NO
FAILURE MODE-OUT OF TOLERANCE-REPORTED FAILURES OF TWO DEMODULATOR ASSEMBLIES, S/N 213 AND 215, FAILED TO MEET LIMITS AS SPECIFIED IN EOP 330.141.1 COMPUTER COMPARTOR ACCEPTANCE TEST. BOTH UNITS RETEST TO EOP 330.143 AND FOUND TO BE WITHIN ALL SPECIFIED LIMITS. REPORTED FAILURE WAS CAUSED BY INCORRECT TOLERANCE LIMITS IN PARAGRAPH 7.8.1 OF EOP 330.141.1.						
CORRECTIVE ACTION-GO/C ISSUED TEMPORARY CHANGE AUTHORIZATION 9 TO ENGINEERING OPERATING PROCEDURE 330.141.1 ON NOVEMBER 28, 1965 REVISING THE LIMITS OF PARAGRAPH 7.8.1.						
P.U./LOADING M-GOC-A/B COMPUTER COMPARTOR	HC-A9-20-148F COMPUTER COMPARTOR-P/U SYSTEM	FAR 7-43040-819	620817	FACTORY	YES	60/C NO
FAILURE MODE-CONTAMINATION-P/U COMPUTER COMPARTOR REPORTLY FAILED TEST FOR MERCURY VAPOR. FAILURE WAS VERIFIED. MERCURY WAS INTRODUCED INTO THE CANISTER DURING LEAK TEST IN WHICH ANY CANISTER PRESSURE CHANGE WAS MEASURED WITH A MERCURY MANOMETER.						
CORRECTIVE ACTION-MERCURY MANOMETERS IN GO/C MANUFACTURING AND PRODUCT SUPPORT AREAS WERE REPLACED WITH GAGE TYPE PRESSURE INDICATORS.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	ACEE-0792/PZ-48A-01-179 ERRON-DEMOMULATOR	COMPOSITE-FRD/DPL 87-43010-13	1790 620807	ETR	YES	60/C NO
FAILURE MODE-OUT OF SPECIFICATION. EDO VOLTAGE WAS BELOW REDLINE WITH PROPELLANTS AT FLIGHT LEVELS. SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-MATCHED SET 292 WAS REPLACED WITH MATCHED SET 361. (PAR 99-20-183).						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	SP-A9-20-138F COMPUTER COMPARTOR	FAR 7-43040-817	620731	FACTORY	YES	60/C NO
FAILURE MODE-CONTAMINATION-P/U COMPUTER COMPARTOR REPORTEDLY FAILED THE MERCURY VAPOR TEST IN FACTORY CHECKOUT AREA. FAILURE NOT CONFIRMED. BLENDED-SULFIDE PAPER TEST FAILED TO INDICATE THE PRESENCE OF MERCURY VAPOR IN THE COMPARTOR.						
CORRECTIVE ACTION-MERCURY MANOMETER IN GO/C MANUFACTURING AND PRODUCT SUPPORT AREAS WERE REPLACED WITH GAGE TYPE PRESSURE INDICATORS.						

GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
ESSURE INDICATORS.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	3P-18-20-136P AMPLIFIER	FAR 27-43016-13	815-D 620730	FACTORY	NO	620730
FAILURE MODE-OUT OF TOLERANCE-FUEL VALVE UPPER LIMIT COULD NOT BE ADJUSTED DURING FINAL CHECKOUT. FAILURE OF T-2 CO NVERTER AMPLIFIER RESULTED FROM A CIRCUIT MODIFICATION. OTHER CASES REPORTED IN FAR 9P-A-20-149F, -156F, -156F, -177F						
CORRECTIVE ACTION-VENDOR INCORPORATED AN ENTIRELY NEW DESIGN IN ALL UNITS BUILT. QUALITY CONTROL SURVEY NO 6-63 REM OVED QUESTIONABLE CONVERTER AMPLIFIER FROM SERVICE.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	A-9-20-155P AMPLIFIER	FAR 7-43040-807	620725	FACTORY	YES 60/C NO	620725
FAILURE MODE-OUT OF TOLERANCE-THE AMPLIFIER FAILED IN FINAL SLOFF AREA WHEN IT EXHIBITED LOW SIGNAL-TO-NOISE RATIO O. FAILURE NOT CONFIRMED WHEN TESTED TO PROCEDURE. FAILURE WAS EITHER HUMAN ERROR OR EXTERNAL CIRCUIT MALFUNCTION OF THE ISOLATION AMPLIFIER.						
CORRECTIVE ACTION-60/C PERSONNEL WERE INFORMED THAT THE ISOLATION AMPLIFIER SHOULD HAVE THE CONDUCTIVE PAINT GROUND ED DURING TEST AND THAT BONDING OF THE AMPLIFIER PAINT TO COMPUTER COMPARTOR CASE SHOULD BE TIGHT.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	A-9-24-279P ISOLATION AMPLIFIER	FAR 7-43448-807	620725	FACTORY	YES NO	620725
FAILURE MODE-OUT OF TOLERANCE. THE OUTPUT VOLTAGE WAS ONLY 12.0 VOLTS WHEN 13.0 VOLTS IS REQUIRED. THIS WAS APPAREN TLY CAUSED BY IMPROPERLY NOT GROUNDING THE EXTERIOR CONDUCTIVE PAINT.KPM CORRECTIVE ACTION-CAUSE OF FAILURE NOT CONF IRMED. FACTORY PERSONNEL WERE INFORMED THAT ISOLATION AMPLIFIERS SHOULD HAVE THEIR CONDUCTIVE PAINT GROUND.						
CORRECTIVE ACTION-CAUSE OF FAILURE NOT CONFIRMED. FACTORY PERSONNEL WERE INFORMED THAT ISOLATION AMPLIFIERS SHOULD HAVE THEIR CONDUCTIVE PAINT GROUND.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	AX62-0030/PC-4CO-08-113 ERROR DEMODULATOR	COMPOSITE-FACTORY 27-43016-13	1130 620710	FACTORY	YES NO	620710
FAILURE MODE-OUT OF TOLERANCE. THE DEMODULATOR ERROR VOLTAGE AT TEST POINT 26 WAS +0.60 (0 PLUS OR MINUS 0.50 VOLTS WAS EXPECTED).						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						

GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE	SITE	PRI	VENDOR NAME
918-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE DIP	TIME DIP	OTH	VENDOR PART NO
VEHICLE EFFECT-COMPOSITE RESCHEDULED. RETURN OF COMPOSITE WAS REQUIRED AFTER REPLACING DEFECTIVE UNIT.						
CORRECTIVE ACTION-THE MATCHED SET, 3/N 379 WAS REMOVED AND REPLACED WITH MATCHED SET 3/N 393.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	A-49-20-119F COMPUTER COMPARTOR-P/U SYSTEM	FAR 7-43040-810	820329	FACTORY	YES NO	YES 50/C
FAILURE MODE-CONTAMINATION-COMPARATOR FAILED THE SHIFF TEST USING THE BECKMAN MODEL 25 MERCURY VAPORMETER. THE METER INDICATED A CONTAMINATION IN EXCESS OF 0.1 (MG) OF MERCURY PER CUBIC METER. LABORATORY TESTING FAILED TO CONFIRM THE REPORTED FAILURE.						
CORRECTIVE ACTION-NO CORRECTIVE TAKEN.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	MC-98-20-120F COMPUTER COMPARTOR-P/U SYSTEM	FAR 7-43040-819	820318	ETR	YES NO	YES 50/C
FAILURE MODE-CONTAMINATION-REJECTED WHEN IT FAILED TO PASS THE SHIFF TEST. LABORATORY TESTING FAILED TO CONFIRM THE REPORTED FAILURE. OTHER CASE REPORTED IN FAR MC-98-20-121F, MC-98-20-135F.						
CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	MC-98-20-137F AMPLIFIER	FAR 7-43040-819	820420	14	YES NO	YES NO
FAILURE MODE-OUT OF TOLERANCE-P/U SET REPORTEDLY FAILED TO GIVE AN ELECTRICAL OUTPUT EQUIVALENT TO THE P/U VALVE POSITION. FAILURE WAS CAUSED BY TWO COLD-SOLDER JOINTS IN AR-107, PART NO. 7-04391-9.						
CORRECTIVE ACTION-VENDOR INCORPORATED AN ENTIRELY NEW DESIGN IN ALL UNITS BUILT.						
P.U./LOADING-GOC-A/B COMPUTER COMPARTOR	AD61-0349/04650/L8-4ND-01-114	COMPOSITE-FRD/DPL	114D	WTR	NO NO	NO NO
FAILURE MODE-ERRATIC OPERATION, ERRATIC EDO OUTPUT, CAUSED BY RELEASE OF STORAGE TANK PRESSURE INTO LOX TANK DUE TO LOW LOX STORAGE TANK SUPPLY CAUSING VORTICING IN LOX STORAGE TANK OUTLET.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. PREMATURE 99.5 PERCENT EDO SIGNAL.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-UNKNOWN.						

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CONVAIR DIVISION

15 JUN 1968

DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AE61-0581/FC-4CO-03-083	COMPOSITE-FACTORY	93D 610920	FACTORY	NO	60/C NO	899336
<p>FAILURE MODE-FAIL DURING OPERATION. ERRATIC OPERATION WAS EVIDENT ON RECORDINGS OF ERROR RATIO DEMOD OUTPUT AND SUS TAINER MAIN FUEL VALVE POSITION MEASUREMENTS DUE TO THE TEST EQUIPMENT OPERATOR INADVERTENTLY DEPRESSURIZING AND THE N PRESSURIZING THE AIRBORNE MANOMETERS.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED. PARTIAL COMPOSITE RETEST WAS REQUIRED.</p> <p>CORRECTIVE ACTION-OPERATOR WAS CAUTIONED TO EXERT GREATER CARE AND NUMEROUS FIX RUNS WERE CONDUCTED TO VERIFY THE S YSTEM INTEGRITY.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AA61-0081/P3-38N-01-22 ERROR DEMODULATOR	COMPOSITE-PRD/DPL	22E 610829	ETR	YES NO		899746
<p>FAILURE MODE-OUT OF TOLERANCE. THE ERROR DEMODULATOR OUTPUT SIGNAL TOOK 100 SECONDS TO RECOVER AFTER GOING TO SEQUE NCE 2 TANK PRESSURES. NORMAL RECOVERY TIME WAS APPROXIMATELY 48 SECONDS.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-A LEAK TEST OF PU SENSING LINES AND A TEST OF THE CONSTANT FLOW VALVE WERE MADE AND PROVED SATISF ACTORY. CAUSE OF THE ABNORMAL RECOVERY TIME WAS NOT DETERMINED.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	A-9H-2D-075F AMPLIFIER-DICDE	FAR 27-43009-801	33E 610612	FORDES	YES NO		899314
<p>FAILURE MODE-OUT OF TOLERANCE-A REVERSE OUTPUT WAS OBTAINED FROM R202 AND R206 ADJUSTMENT WITH CORRECT INPUT APPLIE D. THE LIMIT MAGNETIC AMPLIFIER Z202, PRODUCED AN EXCESSIVE OFFSET VOLTAGE WHICH WAS DUE TO ONE OF THE FOUR DIODES. TYPE 1M559, CONDUCTING AN EXCESSIVE REVERSE CURRENT AT MODERATE TEMPERATURE LEVELS.</p> <p>CORRECTIVE ACTION-NO ACTION TAKEN-THIS MODEL OF P/U SET IS NO LONGER MANUFACTURED.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AE61-0582/FC-5CO-01-034 ERROR DEMODULATOR	COMPOSITE-FACTORY	54E 610803	FACTORY	YES NO	60C NO	
<p>FAILURE MODE-OUT OF TOLERANCE. EDO AT TP 26 WAS 9.0 VDC WHEN 0.0 PLUS OR MINUS 1.70 VDC WAS EXPECTED. CAUSE UNKNOWN</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNAL.</p>							

GENERAL DYNAMICS  
CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AE61-0033/FC-SCO-08-017 AMPLIFIER	COMPOSITE-FACTORY	17E 610110	FACTORY	YES NO	YES 60/C
<p>FAILURE MODE-ERRATIC OPERATION. TELEMETRY MEASUREMENT P520D (SUSTAINER MAIN FUEL VALVE) DID NOT TRACK COINCIDENTLY WITH THE ERROR DEMODULATOR OUTPUT SIGNAL. THE CONVERTER AMPLIFIER IN THE COMPUTER COMPARTOR WAS DETERMINED TO BE AT FAULT.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. SYSTEM LEVEL AND COMPOSITE RETESTING REQUIRED.</p> <p>CORRECTIVE ACTION-REPLACED THE COMPUTER COMPARTOR AND THE MANOMETERS.</p>						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AE61-0015/FC-ACO-04-088 ERROR DEMODULATOR	COMPOSITE-FACTORY	88D 601222	FACTORY	YES NO	YES 60/C
<p>FAILURE MODE-FAIL DURING OPERATION. SUSTAINER MAIN FUEL VALVE FAILED TO REACH ITS PROGRAMMED LIMITS. THIS WAS CAUSED BY LOW SIGNAL OUTPUT OF THE ERROR DEMODULATOR.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. SYSTEMS LEVEL AND COMPOSITE RETESTS REQUIRED.</p> <p>CORRECTIVE ACTION-MATCHED SET S/N 338 REPLACED BY S/N 346.</p>						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	98-20-044 DEMOMULATOR ASSY.	FAR	9E 601214	ETR	YES NO	YES 60/C
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. FAILED TO POSITION THE PU FUEL VALVE TO CORRECT POSITION. CAUSE TRACED TO POOR SOLDER CONNECTIONS.</p>						
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AE60-0888/FC-ACO-01-097 ERROR DEMODULATOR	COMPOSITE-FACTORY	97D 601105	FACTORY	NO NO	
<p>FAILURE MODE-FAIL DURING OPERATION-TELEMETRY MEASUREMENT U91V (ERROR RATIO DEMO OUTPUT) INDICATED COMPLETE BREAKUP PRO. 166 TO 182 SECONDS AFTER WHICH THE BIAS LEVEL SHIFTED 18PCT 1BW. THE CAUSE WAS ATTRIBUTED TO AN UNSTABLE MANOMETER PRESUMIZATION EXERCISER. (AGE). SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. PARTIAL COMPOSITE RETEST WAS REQUIRED.</p>						



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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VENDOR PART NO
CORRECTIVE ACTION-THE PRESSURIZATION EXERCISER (AGE) WAS READJUSTED.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	AC-80-0038/81-303-A1-05 PCU SEQUENCE III FUEL CONTROLLER	CAPTIVE	SE 801004	81	YES NO	
FAILURE MODE-FAIL DURING OPERATION. THE GROUND PCU FUEL CONTROLLER DID NOT MAINTAIN THE REQUIRED REFERENCE PRESSURE OF 82.0 PSIG. THE PRESSURE AT ENGINE START WAS 81.1 PSIG.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	AE80-036/7C-4CO-01-81 ERROR DEMODULATOR	COMPOSITE-FACTORY	81D 600889	FACTORY	NO NO	80/6
FAILURE MODE-OUT OF TOLERANCE. THE ERROR RATIO DEMODULATOR OUTPUT WAS OUT OF TOLERANCE AT TEST POINT 26. THE SYSTEM WAS SLOW IN PRESSURIZING WHICH RESULTED IN EXTENDING THE TIME FOR DROPPING PNEUMATIC PRESSURE UNTIL APPROX 240 SECS.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TESTING REQUIRED.						
CORRECTIVE ACTION-TEST POINT 26 IN THE PROPELLANT UTILIZATION SYSTEM EXERCISER WAS ADJUSTED TO CORRECT THE OUT-OF-TOLERANCE READOUT OF THE ERROR DEMODULATOR OUTPUT.						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	AE80-0487/7C-4CO-03-27 DEMOMULATOR	COMPOSITE-FACTORY	27D 600317	FACTORY	NO NO	
FAILURE MODE-OUT OF TOLERANCE-DURING TESTING THE ERROR RATIO DEMODULATOR OUTPUT WAS OUT OF TOLERANCE AT TEST POINT 26.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS-TEST POINT 26 GAVE WRONG OUTPUT.						
VEHICLE EFFECT-COMPOSITE RESCHEDULED. COMPOSITE RE-TEST WAS REQUIRED.						
CORRECTIVE ACTION-68E WAS READJUSTED AND POST-COMPOSITE TESTING INDICATED SATISFACTORY OPERATION						
P.U./LOADING-60C-A/B COMPUTER COMPARTOR	88-20-027 ERROR DEMODULATOR-CIRCUIT BOARD	FAR	58D 600313	ETR	YES NO	50/C
FAILURE MODE-ERRATIC OPERATION OF THE ERROR DEMODULATOR OUTPUT (EDO). SIGNAL VARIED FROM PLUS 0.23 TO PLUS 4.0 VOLT 8. FAILURE ANALYSIS REVEALED AREAS OF SOLDER TO BE VERY THIN AT THE INTERSECTION OF THE PRINTED CIRCUIT BOARDS.						

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CONVAIR DIVISION

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
CORRECTIVE ACTION-CONVAIR HAS TAKEN ACTION THROUGH QUALITY CONTROL PROCEDURES TO CORRECT THIS TYPE OF FAILURE.							998724
P.U./LOADING-GDC-A/B COMPUTER COMPARATOR	AE80-0487/PC-4CO-02-27	COMPOSITE-FACTORY	27D	FACTORY	NO		998388
FAILURE MODE-OUT OF TOLERANCE-THE EDO OUTPUT SIGNAL AND VALVE POSITIONS WERE IMPROPER DUE TO MISALIGNED 68E. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TESTS REQUIRED TO DEMONSTRATE PROPER OPERATION. CORRECTIVE ACTION-THE GROUND SUPPORT EQUIPMENT WAS REALIGNED.							998100
P.U./LOADING-GDC-A/B COMPUTER COMPARATOR	AE80-0239/PC-4CO-03-81 ERROR-DEMULATOR	COMPOSITE-FACTORY	81D	FACTORY	NO	60310	998765
FAILURE MODE-OUT OF TOLERANCE. TEST POINT 26 TOO HIGH A MALFUNCTION OF THE P.U. EXERCISOR CAUSED DEMODULATOR TO BE PLUS 0.48 VDC. TOLERANCE IS MINUS 0.41 VDC TO PLUS 0.41 VDC. THE MANOMETERS WERE NOT PROPERLY PRESSURIZED BY THE EXERCISOR. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. ERROR DEMODULATOR OUTPUT TOO HIGH. CAUSED BY FAULTY AGE. VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TEST REQUIRED TO TRACE TROUBLE TO AGE. CORRECTIVE ACTION-NOT KNOWN.							
P.U./LOADING-GDC-A/B COMPUTER COMPARATOR	90-20-017 TRANSDUCEA-FUNCTIONAL	PAR	33D	37882	YES	60300	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME-NT102 BALANCING TRANSDUCER WORN GEAR KNOB FAILED TO TURN. PROBLEM T RACED TO CHIPS IN GEARS AND BURRS ON GEARS. ALSO WORN GEAR MOUNTING BRACKETS AND HOLES NOT ALIGNED PROPERLY CAUSING SCORING.							
CORRECTIVE ACTION-60/C TOOK CORRECTIVE ACTION THROUGH QUALITY CONTROL PROCEDURES...							
P.U./LOADING-GDC-A/B COMPUTER COMPARATOR	A2M-27-468/PC-4CO-01-84 DEMULATOR	COMPOSITE-FACTORY	34D	FACTORY	NO	60130	
FAILURE MODE-OUT OF TOLERANCE. READING OBTAINED FOR DEMODULATOR ERROR WAS 0.43VDC WHEN MINUS 0.41VDC WHEN PLUS 0.41 VDC WAS SPECIFIED. ALSO THE READING FOR VALVE COMMAND WAS PLUS 1.1VDC AND MINUS 0.43VDC WHEN PLUS 0.43VDC WAS SPECIFIED.							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
<p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-COMPOSITE RESCHEDULED.</p> <p>CORRECTIVE ACTION-RE TEST SET RE-ADJUSTED. POST-COMPOSITE TESTS WERE THEN SATISFACTORY.</p>							997399
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	DA136/B2-4MO-03-25 ERROR DEMODULATOR WIRING	COMPOSITE-FRD/DPL	25D 591204	WTR	YES NO	CONVAIR	998909
<p>FAILURE MODE-OUT OF TOLERANCE. FUEL LOAD START ERROR DEMODULATOR OUTPUT WAS MINUS 17.5 VDC. AS FUEL TANKING PROGRESSED EDO OUTPUT WENT POSITIVE. AS A RESULT, WHEN FUEL HAD REACHED THE 90 PCT FULL LEVEL INDICATIONS OF LOX 90 PCT FUL L AND LOX 99.5 PCT FULL WERE RECEIVED. PROBLEM DUE TO REVERSED LEADS AT PU CANNISTER.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-DPL WAS ABORTED AND RESCHEDULED</p> <p>CORRECTIVE ACTION-THE LEADS TO THE PU CANNISTER WERE REVERSED TO CORRECT THE POLARITY OF THE EDO OUTPUT.</p>							995422
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	B6-20-014 HARNES/WIRING-CONNECTOR	FAR 27-43108-1	591200	FACTORY	YES NO	60/C	998975
<p>FAILURE MODE-ELECTRICAL OPEN-EXAMINATION REVEALED THAT POTTING COMPOUND HAD FAILED TO ADHERE TO THE TEFLON COVERED WIRES. LEAD L HAD PULLED OUT OF THE PIN CONNECTION IN THE PLUG USJ1. IMPROPER POTTING COMPOUND PREVENTED THE TEFLON LEADS BEING PROPERLY SECURED AND RESULTED IN ULTIMATE FAILURE.</p> <p>CORRECTIVE ACTION-60/C HAS TAKEN ACTION TO PREVENT RECURRENCE OF THIS TYPE OF FAILURE.</p>							998975
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	A2C-27-095/P4-402-00-19 ERROR DEMODULATOR	COUNTDOWN	15D 591015	ETR	YES NO		998975
<p>FAILURE MODE-ERRATIC OPERATION. ERROR DEMODULATOR OUTPUT SIGNAL ERRATIC. NO ADDITIONAL DATA.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS</p> <p>VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. COUNTDOWN ABORTED AS RESULT OF ERROR DEMODULATOR PROBLEM AND BECAUSE OF FUEL CONTAMINATION OF THE PNEUMATIC CONTROL SYSTEM.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>							

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI JTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	FTA3012/PE-302-00-08	FRF	8C 990709	ETR -9000	YES NO		093270
<p>FAILURE MODE-OUT OF TOLERANCE. PRIOR TO LOZ TANKING THE EDO DID NOT INDICATE THE FUEL SATURATION LIMIT OF -20 VOLTS AS EXPECTED. ACTUAL VALUE WAS -7 VOLTS.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. INCORRECT READINGS OBSERVED ON ERROR DEMODULATOR OUTPUT. SHOULD BE -20 VOLTS BEFORE LOZ TANKING.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. 30 MIN HOLD FOR TOWER MOVEMENT IS ATTRIBUTABLE TO THIS PROBLEM.</p> <p>CORRECTIVE ACTION-REPLACED PU CANISTER.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	AZM-E7-180/FC-6CD-01A-03	COMPOSITE-FACTORY	5D 590220	FACTORY	YES NO		091960
<p>FAILURE MODE-OUT OF TOLERANCE. EDO SIGNAL WAS PLUS 2.4 VDC WHICH WAS 0.10 VDC OVER TOLERANCE.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-COMPOSITE RESCHEDULED. POST COMPOSITE TESTING VERIFIED PROPER OPERATION.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	14-401-01-80 ERROR DEMODULATOR	CAPTIVE	390120	WTR	NO N/C		094264
<p>FAILURE MODE-ERRATIC OPERATION. TANK PRESSURES DURING THE FIRING CAUSED INSTABILITY OF THE ERROR DEMOD SIGNAL. THE INSTABILITY OR CYCLING CAUSED PLUS AND MINUS 5 PERCENT NOMINAL MIXTURE RATIO.</p> <p>SYSTEM EFFECT-NONE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-CONTROL TANK PRESSURES WITH PRESSURE PROGRAMMER FOR FOLLOWING TEST.</p>							
P.U./LOADING-GDC-A/B COMPUTER COMPARTOR	ZC-7-278/PS-2UA-00-4 COMPUTER	FLIGHT	4B 580802	ETR 0	YES YES		
<p>FAILURE MODE-OUT OF EXPECTED TEST VALUE-THE CONVAIR PROPELLANT UTILIZATION SYSTEM NULL BALANCE METER INDICATED OFF SCALE DURING THE ENTIRE TEST POSSIBLY DUE TO MALFUNCTION OF THE COMPUTER- COMPARTOR.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. PROPELLANT UTILIZATION SYSTEM INDICATED A MAXIMUM FUEL RICH ERROR THROUGHOUT THE TEST.</p> <p>VEHICLE EFFECT-NONE-THE PU SYSTEM WAS OPERATED OPEN LOOP THROUGHOUT THE TEST AND THE FUEL RICH INDICATION HAD NO EF</p>							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL. LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PAI OTH	VENDOR NAME VENDOR PART NO
EFFECT ON VEHICLE PERFORMANCE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-GOC-A/B COMPUTER COMPARATOR	SP-9D-20-2377 DEMODULATOR SCREW	FAR 7-43018-25	E12-D	WTR	YES NO	
FAILURE MODE-FAIL DURING OPERATION-UNIT WAS REJECTED DUE TO A FROZEN ADJUSTMENT SCREW THAT COULD NOT BE TURNED. FAILURE WAS CONFIRMED AS CAUSED BY AN OUT OF TOLERANCE MOUNTING FRAME.						
CORRECTIVE ACTION-RECOMMENDED THAT INSPECTION PROCEDURES BE REVISED TO ACCOUNT FOR THIS ITEM.						
P.U./LOADING-GOC-A/B TELEMETRY SET AND TRANSDUCER POWER SUPPLY	LV-98-24-4631-C FLIGHT 27-12991-1	1950 640526	FACTORY	YES NO		
FAILURE MODE-OUT OF TOLERANCE. UNIT WAS REJECTED FOR OUTPUT VOLTAGE-69 VDC LOW.						
CORRECTIVE ACTION-NONE. FAILURE ANALYSIS WAS WAIVED.						
P.U./LOADING-ACOUS-A/B LOWER ACOUSTICA FUEL BOSS	69-0071-13 COMPOSITE-FRD/DPL	7113 651109	WTR	YES NO		
FAILURE MODE-EXTERNAL LEAK. THE LOWER ACOUSTICA FUEL BOSS WAS LEAKING FUEL.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-BOSS WAS CLEANED AND A COAT OF PR1422 WAS APPLIED PER I.R. 996773.						
P.U./LOADING-ACOUS-A/B	60/AG3-0107/01-901-00-85 FLIGHT	65E 630424	OGTF1	296.47	YES NO	
FAILURE MODE-OUT OF SPECIFICATION. THE PROPELLANT RESIDUALS CALCULATED WERE NOT WITHIN SPECIFICATIONS. RESIDUAL PROPELLANT ERROR WAS 232 POUNDS OF FUEL. SPECIFICATIONS REQUIRE THE RESIDUAL ERROR TO BE LESS THAN 125 POUNDS. THE CAUSE OF THE EXCESS IS NOT KNOWN.						
SYSTEM EFFECT-NONE.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						

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# DIFFICULTIES RE/VIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-48-08-3185F LIQUID OXYGEN TRANSDUCER ASSEMBLY	FAR 27-43169	118P 640826	FACTORY	YES NO	
FAILURE MODE-OUT OF SPECIFICATION. UNIT WAS REJECTED DURING CHECKOUT FOR DISCONTINUITY. FAILURE COULD NOT BE CONFIRMED.						
CORRECTIVE ACTION-FAILURE COULD NOT BE CONFIRMED. NO CORRECTIVE ACTION TAKEN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-49-20-3004-F LIQUID OXYGEN LEVEL TRANSDUCER ASSEMBLY	FAR 27-43169-843	147P 640424	FACTORY	YES NO	
FAILURE MODE-OUT OF TOLERANCE. TRANSDUCER ASSEMBLY REJECTED DUE TO RESISTANCE READING OF 2.0 OHMS. ALLOWABLE RESISTANCE IS 7.0 TO 10.0 OHMS PER EOP 330.343. FAILURE NOT CONFIRMED.						
CORRECTIVE ACTION-FAILURE NOT CONFIRMED. NO CORRECTIVE ACTION TAKEN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	D05372 FUEL CONTROL UNIT	UTP-QUAL/PPT 27-04237-13	640401	60/C	YES NO	ACOUSICA CUG1-2
FAILURE MODE-FAIL DURING OPERATION. AFTER THE VACUUM RUN OF 3.44 INCHES, THE SPECIMEN FAILED TO OPERATE FROM THE LO AD TO UNLOAD POSITION (NET TO DRY). THIS FAILURE WAS AT 160 DEGREES F. THE SAME TYPE OF FAILURE HAD OCCURRED ON MARC H 28 AT -30 DEGREES F.						
CORRECTIVE ACTION-REVISE COMPONENT SPECIFICATION TO BE CONSISTENT WITH THE GENERAL SPECIFICATION 7-002088. NEW TEMPERATURE LIMITS ARE TO BE 10 DEGREES F TO 110 DEGREES F. CONTINUE TEST, REPEAT UNIT TO NEW TEMPERATURE RANGE.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	1-5883.1 REV.B FUEL CONTROL UNIT	UTP-PET 27-04237-13	64G127	60/C	YES NO	ACOUSICA 101945
FAILURE MODE-ERRATIC OPERATION. IN A PET PERFORMANCE PROOF CYCLE, DURING THE INITIAL EXAMINATION OF PRODUCT, THE VOLTAGE VARIED. IT INDICATED 27V ON THE AVERAGE OF ONCE IN EVERY FIVE IMMERSIONS. THE OTHER TIMES THE VOLTAGE READING WAS ZERO. THIS WAS IN THE NET OR IMMERSED CONDITION.						
CORRECTIVE ACTION-RETURN UNITS TO VENDOR FOR RECYCLE OF THE NON-IMPROVED UNIT. BASED ON PPT FAILURES ON 13 JANUARY, VENDOR HAS STARTED TO CHANGE THE TRANSFORMER IN THE UNIT BY CLAIMING PROPRIETARY RIGHTS. VENDOR HAD CHANGED FROM ONE TRANSFORMER TO A CHOICE OF FIVE OTHER VENDORS WITHOUT DRAINING CHANGE.						

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIV	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-99-20-197F FUEL PROBE ASSEMBLY	FAR 27-72269-029	830123	FACTORY	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED IN FACTORY CHECK-OUT. FAILURE WAS CONFIRMED AS DUE TO WIRING ERROR AND DAMAGED TRANSDUCER ASSEMBLY.						
CORRECTIVE ACTION-PROBLEM WAS REVIEWED WITH PRODUCTION AND INSPECTION PERSONNEL TO INSURE THAT FUTURE TESTING AND HANDLING WILL BE SATISFACTORY AND ACCURATE.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	D4863/01-502-00-64 PROBE	COUNTDOWN	64E 621216	08071	YES NO	
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THE 95 PCT PRIMARY FUEL PROBE FAILED DRY AFTER THE 95 PCT SECONDARY PROBE HAD ACTIVATED.						
SYSTEM EFFECT-PARTIAL LOSS OF REDUNDANCY.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-99-20-207-F FUEL PROBE ASSY.	FAR 27-72453-903	88F 621106	WAAB	YES NO	
FAILURE MODE-STRUCTURAL. THE BOND BETWEEN TRANSDUCER CRYSTAL AND CASE RUPTURED.						
CORRECTIVE ACTION-THIS TYPE OF FAILURE INCLUDED IN STUDY INITIATED BY TCP 1250, 7/14/82. VENDOR ADDED AN ETCHING PROCESS TO THE CRYSTAL BONDING SURFACE TO INSURE ADHESION OF SILVER PLATING.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-99-20-197F LOE PROBE ASSEMBLY	FAR 27-43165-643	28F 621010	PLATTESBU RG	YES NO	
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED FOR INTERMITTENT OPERATION. FAILURE WAS CONFIRMED AND CAUSED BY IMPROPER CONNECTION OF TRANSDUCER LEADS.						
CORRECTIVE ACTION-PRODUCTION AND INSPECTION PERSONNEL WERE INFORMED OF THE FAILURE AND CAUSE.						

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENC JR PART NO
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9D-20-182F FUEL PROBE ASSEMBLY	FAR 27-72269-823	64E 620823	WTR	NO	NO
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED BECAUSE OF INTERMITTANT OPERATION OF 95 PERCENT AND 100 PER CENT TRANSDUCERS. FAILURE WAS NOT CONFIRMED.						
CORRECTIVE ACTION-INVESTIGATIONS UNDER TCP 1230 WERE INITIATED DUE TO SIMILAR CONFIRMED FAILURES WHICH REVEALED DEFECTIVE WIRING.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9L-20-180F FUEL PROBE ASSEMBLY	FAR 27-72453-803	47F 620820	LINCOLN	YES NO	NO
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED BECAUSE OF FAILURE TO OPERATE. FAILURE WAS CONFIRMED AND CAUSED BY EXCESSIVE IMPEDANCE RESULTING FROM POOR CRYSTAL BONDING.						
CORRECTIVE ACTION-VENDOR REVISED HIS METHOD OF BONDING CRYSTALS AND DIAPHRAGMS TO INSURE GREATER ADHESION.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9M-20-134F FUEL PROBE ASSEMBLY	FAR 27-72453-803	23F 620712	SCHILLIN	YES NO	NO
FAILURE MODE-LEAK (EXTERNAL). UNIT FAILED WHEN IT LEAKED. FAILURE WAS CAUSED BY MISALIGNED TRANSDUCER IN PROBE HOUSING NOT PERMITTING PROPER SEAL.						
CORRECTIVE ACTION-FACTORY PERSONNEL WERE INSTRUCTED IN THE USE OF A CENTERING TOOL TO BE USED DURING ASSEMBLY.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9D-20-140-F LEE SENSOR	FAR 27-04240-813	64E 620811	WTR	YES	60/C NO
FAILURE MODE-PREMATURE OPERATION. PROBE INDICATED A WET CONDITION WHEN KNOWN TO BE DRY.						
CORRECTIVE ACTION-NONE. FAILURE COULD NOT BE CONFIRMED.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AE62-0533 ACOUSTICA 90 PERCENT PROBE	COMPOSITE-FRD/DPL	127D 620309	WTR	YES	ACOUSTICA NO
FAILURE MODE-PREMATURE OPERATION. ACOUSTICA 90 PERCENT PROBE ACTIVATED PREMATURELY.						



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-2 SECOND PROBE TIMER WAS RE-CHECKED.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9L-20-123P FUEL SENSOR	FAR 27-72452-803	820416	LINCOLN	YES NO	
FAILURE MODE-CONTAMINATION. FAILURE OF THE PROBE TO SENSE WAS CAUSED BY FOAM AND BUBBLE FORMATION AROUND THE PROBE. THIS FAILURE EFFECTS BOTH PRIMARY AND SECONDARY PROBES. 13 IDENTICAL FAILURES ARE REPORTED ON FAR A-9M-20-125-F, 12 6-F, 127-F, 128-F, 130-F, 131-F, 132-F, 133-F, 134-F, 142-F, 175-F, 176-F, 179-F, 188-F.						
CORRECTIVE ACTION-CORRECTION OF POOR VENDOR WORKMANSHIP IN SOLDERING TRANSDUCER CONNECTIONS AND WIRING. REDESIGN OF THE PROBE PROVIDED FOR TRANSDUCER SCREENS TO ATTENUATE FUEL FOAMING.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-86-20-118-F TORUSSEAL	FAR 83-87800-053	620404	SYCAMORE	YES NO	ADVANCED PRODU NO CTS 9550-7-3
FAILURE MODE-OUT OF TOLERANCE. DIMENSIONS OF THE TORUSSEAL PERMITTED LEAKAGE BETWEEN THE PROBE AND THE TANK.						
CORRECTIVE ACTION-SYSTEM WAS PURGED OF DEFECTIVE PARTS AND VENDOR CORRECTED HIS MANUFACTURING TECHNIQUES.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9D-20-118-F FUEL SENSOR	FAR 27-72269-823	86E 620223	OSTF-1	YES NO	
FAILURE MODE-CONTAMINATION. FAILURE OF THE PROBE TO SENSE WAS CAUSED BY FOAM AND BUBBLE FORMATION AROUND THE PROBE. THIS FAILURE EFFECTED BOTH PRIMARY AND SECONDARY PROBES.						
CORRECTIVE ACTION-REDESIGN OF THE PROBE PROVIDED FOR TRANSDUCER FUEL SCREENS TO ATTENUATE FUEL FOAMING.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9F-20-088P FUEL PROBE ASSEMBLY	FAR 27-72269-803	57E 611106	WARREN	YES NO	
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED FOR FAILURE DURING TANKING. FAILURE WAS CONFIRMED IN TEST FIXTURE WITH AGITATED NP-1.						
CORRECTIVE ACTION-INVESTIGATION UNDER TCF1250 DISCLOSED MAJOR CAUSE OF FAILURE TO BE VENDOR WIRING. TEST EQUIPMENT						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
WAS DESIGNED TO DETECT FAULTY UNITS AND SURVEYS INITIATED. PROBE DESIGN CHANGES INCORPORATE FUEL TRANSDUCER SCREENS TO INHIBIT FUEL AGITATION.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9F-20-078F FUEL PROBE	FAR 27-72200-025	611019	WALKER	YES NO	YES 60/C
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED FOR FAILURE DURING TANKING. FAILURE WAS REPEATED IN TEST FIXTURE UNDER FOAMING RP-1 CONDITIONS.						
CORRECTIVE ACTION-NEWLY DESIGNED TRANSDUCER SCREEN WAS INSTALLED ON ALL D AND E SERIES. F SERIES WERE EXCLUDED BECAUSE OF STORED FUEL DESIGN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-9H-20-104-F LOX SENSOR	FAR 27-04240-811	611009	FORBES	YES NO	YES NO
FAILURE MODE-OPEN (ELECT). UNIT WAS REJECTED BECAUSE THE RAPID LOAD LOX SECTION B REMAINED AMBER INDICATING PROBE FAILURE. FAILED CONDITION CAUSED BY OPEN ELEMENT. CAUSE OF FAILURE IS UNDETERMINED.						
CORRECTIVE ACTION-PRIOR CORRECTIVE ACTION RUGGEDIZED THIS UNIT. NO FURTHER FAILURES SINCE MID 1962. NO FURTHER ACTION REQUIRED.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AC-61-0094/81-003-AS-01 SENSOR	CAPTIVE	IF 610929	BYC 3.34	YES NO	YES NO
FAILURE MODE-FAIL TO OPERATE AT THE PRESCRIBED TIME. LOX SENSOR 1-B AND 6-B READ DRY THROUGHOUT THE TEST.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. A LOX FIRST SIGNAL WAS RECEIVED AT T PLUS 3.34 SECONDS. THE COMPUTER HAD TO BE MANUALLY RESET TO INSURE THAT THE AUTOMATIC RESET PULSES FROM THE LOGIC UNIT WERE DEFINITELY DEACTIVATED AFTER T PLUS 2 SECONDS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AAS1-0142/P1-59N-03-23 LOX TANK LEVEL SENSOR PROBE	COUNTDOWN	25E 610912	ETR	NO NO	
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LOX TANK LOADING PROBES INDICATED NO SLUG WAS DELIVERED. FAILURE WAS SECONDARY. THE LOX FILL VALVE MICROSWITCH ON THE SLUG TANK FAILED TO GIVE AN OPEN INDICATION AND THE SLUG DELIVERY WAS NOT STARTED.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. LOX LOADING PROBES DID NOT INDICATE THAT LOX SLUG WAS BEING DELIVERED. SECOND						

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<b>MOARY EFFECT.</b> BLUG WAS NOT DELIVERED DUE TO FAULTY MICROSWITCH ON LOX BLUG UNIT.  						
<b>VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED.</b>  						
<b>CORRECTIVE ACTION-REPLACE MICROSWITCH WITH A LIKE ITEM FROM THE LINE FILL VALVE.</b>  						
P.U./LOADING-A/CUS-A/B LOADING PROBE	A-9K-20-081F FUEL PROBE ASSEMBLY	FAR 27-72269-823	44E 610903	FORBES NO	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE DURING TANKING. FAILURE WAS DUPLICATED ONLY WHEN TRANSDUCER WAS SHAKEN WHILE EMERSED IN RP-1.						
CORRECTIVE ACTION-INVESTIGATION UNDER TCP 1230 DISCLOSED MAJOR CAUSE OF FAILURES TO BE IMPROPER WIRING BY VENDOR. YEST EQUIPMENT WAS DESIGNED WITH CAPABILITY TO DETECT FAULTY SENSORS. SURVEYS WERE PERFORMED ON ALL MISSILES. PROBE REDSIGN INCORPORATED TRANSDUCER SCREENS FOR ATTENUATION OF FUEL FOAMING.						
P.U./LOADING-A/CUS-A/B LOADING PROBE	A-9K-20-080 FUEL PROBE ASSY.	FAR 27-72269-803	44E 610903	FORBES NO	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE TO INDICATE A WET CONDITION. FAILURE OF PROBE WAS DUPLICATED ONLY WHEN SHAKEN WHILE EMERSED IN RP-1. ANALYSIS DISCLOSED EXCESSIVE AMOUNTS OF LUBRICANT OIL IN THE TRANSDUCER WHICH INCREASED FAILURE SENSITIVITY.						
CORRECTIVE ACTION-USE OF LUBRICANT ON THE TRANSDUCERS WAS DISCONTINUED EFFECTIVE 12 JANUARY 1962. PROBE REDSIGN IN CORPOTATED TRANSDUCER FUEL SCREEN TO ATTENUATE FUEL AGITATION.						
P.U./LOADING-A/CUS-A/B LOADING PROBE	A-9K-20-099-F LOX SENSOR ASSY.	FAR 27-04240-811	610907	FORBES NO	YES NO	
FAILURE MODE-ERRATIC OPERATION. UNIT WAS REJECTED FOR SUSPECTED INTERMITTENCY. FAILURE WAS CONFIRMED AS CAUSED BY LOW COSE PROTECTIVE COVERING.						
CORRECTIVE ACTION-NONE. MANUFACTURE OF THE RUGGEDIZED PROBE REDSIGN HAS RESULTED IN NO FAILURES SINCE MID 1962.						
P.U./LOADING-A/CUS-A/B LOADING PROBE	A-9F-20-080F FUEL PROBE ASSEMBLY	FAR 27-72269-803	34E 610904	NATF NO	YES NO	
FAILURE MODE-CONTAMINATION. FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED WHEN IT FAILED TO OPERATE DURING TANKING. FAILURE WAS CONFIRMED WHEN TRANSDUCER WAS EMERSED IN RP-1 AND SHAKEN.						

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CORRECTIVE ACTION-DESIGN CHANGES INCORPORATING A FUEL SCREEN WERE MADE TO REDUCE RP-1 AGITATION AT THE TRANSDUCER. INTENSIVE TRAINING OF ASSEMBLY PERSONNEL IMPROVED THE WORKMANSHIP OF THE PROBES.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	9K-20-076F FUEL PROBE ASSEMBLY	FAR 27-21269-3	41E 610802	FAIRCHILD D	YES NO	
FAILURE MODE-CONTAMINATION. FAIL TO OPERATE AT PRESCRIBED TIME. UNIT WAS REJECTED FOR FAILURE AFTER TANKING WAS COMPLETE. FAILURE WAS CONFIRMED ONLY WHEN TRANSDUCERS WERE SHAKEN WHILE EMERSED IN RP-1. IDENTICAL FAILURE REPORTED ON 7 AR 9K-20-077F.						
CORRECTIVE ACTION-FAILURE CONCLUDED TO BE WIRING PROBLEM IN VENDOR TRANSDUCER. NEW TEST EQUIPMENT IS BEING DEVELOPED TO DETECT FAULTY UNITS. PROBE REDESIGN INCORPORATED TRANSDUCER FUEL SCREEN TO ATTENUATE FUEL AGITATION.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	9K-24-136F FUEL PROBE	FAR 27-72269-923	37E 610726	FAFB	YES NO	
FAILURE MODE-FAILED DURING OPERATION. FAILED WET DURING DPL DUE TO IMPROPER WIRING OF SENSOR UNITS. EXISTING SPECS AND TEST EQUIPMENT WOULD NOT DETECT ERROR.						
CORRECTIVE ACTION-ECP 8413 PROVIDED FOR SENSOR WIRING CHECK ON CATEGORY II MISSILES. OTHER VEHICLES WERE TO BE COVERED UNDER ECP 8413-R-1. NEW TEST EQUIPMENT, DRAWING CHANGES AND SPECIFICATIONS ARE PART OF CORRECTIVE ACTION.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A-98-20-066F FUEL LEVEL PROBE	FAR 27-72269-909	21E 610711	ETR	YES NO	
FAILURE MODE-LEAK, EXTERNAL. FAILURE WAS CONFIRMED AS CAUSED BY A DAMAGED SEALING GASKET. TEFLON COATING OF GASKET WAS DAMAGED DURING PROBE INSTALLATION.						
CORRECTIVE ACTION-TORQUE VALUE CHANGES WERE MADE ON INSTALLATION DRAWING TO CONFORM WITH E.O.P.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	EN-1738/LE-401-00-97 ACOUSTICA 100PCT LUX PROBE	FRP	97D 610309	PALC-2	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. ACOUSTICA 100PCT LUX PROBE FAILED DURING PRP.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-NONE.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PR1 OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-REPLACED PROBE.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AA81-0C11/P9-803-00-08 LOADING PROBE	COUNTDOWN	SE 610124	ETR -70	YES NO	
FAILURE MODE-ERRATIC OPERATION. HIGH TOPPING PROBE LOST INTERMITTENTLY DURING LOX SLUGGING.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-COUNTDOWN DELAYED. HOLD CALLED AT -70 SECONDS FOR 13 MINUTES FOLLOWED BY RECYCLE TO -210 SECONDS. AFTER RESTART, WHEN HIGH TOPPING PROBE AGAIN REACHED, FUNCTION WAS JUMPERED IN.						
CORRECTIVE ACTION-THE PROBE CIRCUIT WAS JUMPERED.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AEG0-0748/P1-48N-03-76 SENSOR	COMPOSITE-FRD/DPL	74D 600831	ETR	YES NO	
FAILURE MODE-FAIL DURING OPERATION. ACOUSTICA PRIMARY SENSOR STRINGS OPERATED IMPROPERLY.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AEG0-0748/P1-48N-01-76 SENSOR	COMPOSITE-FRD/DPL	74D 600830	ETR	YES NO	
FAILURE MODE-FAIL DURING OPERATION. DIFFICULTIES WERE EXPERIENCED WITH THE ACOUSTICA TANK LEVEL SENSORS DURING LOX TANKING.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	DA209/B3-4NO-02-93 PROBE	COMPOSITE-FRD/DPL	51D 600619	5768-3	YES NO	
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. FUEL OVERFILL INDICATIONS WERE RECEIVED AFTER LOAD COMPLETE.						
SYSTEM EFFECT-NONE, FUEL LOAD WAS COMPLETED PRIOR TO ERRONEOUS OVERFILL INDICATIONS.						
VEHICLE EFFECT-NONE.						

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CORRECTIVE ACTION-SWITCHED FROM CONVAIN OVERFILL PROBE TO THE ACOUSTICA OVERFILL PROBE.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AA60-0040/P1-4BN-03-34 LOX LOADING PROBE	COMPOSITE-J FACT	34D 600603	ETR	NO NO	
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. DURING DPL LOX LOADING CEASED. FAILURE OF LOADING PROBES TO INDICATE A FULL LOX TANK WAS SECONDARY. LOADING CEASED DUE TO AN ICED LOX FILTER.						
SYSTEM EFFECT-OPERATION STOPS TOO EARLY. SECONDARY FAILURE OF PROBES TO INDICATE FULL LOX TANK. FLOW OF LOX ACTUALLY HAD CEASED DUE TO ICING OF FILTER.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-LOX FILTER WAS REPLACED.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	A2C-27-121/P3-4BN-01-31 ACOUSTICA PLCH 95 PERCENT PROBE	COMPOSITE-FRD/DPL	31D 600217	ETR	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. MALFUNCTION OF THE ACOUSTICA PLCH 95 PERCENT FUEL PROBE RESULTED FROM THE TANK WALL CONNECTOR P-UG NOT BEING PROPERLY FITTED.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. LACK OF FUEL 95 PCT. INDICATION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AC60-0003/31-411-C9-36 95 PERCENT FUEL SENSOR	CAPTIVE	36D 600121	SYC	YES NO	YES ACOUSTICA
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE ACOUSTICA 95 PERCENT FUEL PROBE WAS INOPERATIVE FOR ALL TESTS OF THIS VEHICLE.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE. ACOUSTICA SYSTEM WAS THE SECONDARY LOADING SYSTEM DURING TESTS ON THIS VEHICLE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B LOADING PROBE	AC60-0003/31-411-C9-36 ACOUSTICA LOX SENSORS	C/PTIVE	36D 600121	SYC	YES NO	YES ACOUSTICA
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE ACOUSTICA LOX PROBES DID NOT ACTIVATE DURING LOX TANKING.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE. PRIMARY SYSTEM PERFORMED THE FUNCTION (60/C PU SYSTEM). CORRECTIVE ACTION-NONE. THIS WAS THE LAST RUN ON THIS VEHICLE.							898899
P.U./LOADING-ACOUS-A/B LOADING PROBE	9-1804/81-403A2-38 93 PERCENT FUEL SENSOR	CAPTIVE	38D 591109	SYC	YES NO	YES ACOUSTICA	898904
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. ATTRIBUTED TO A FAULTY PROBE. SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. VEHICLE EFFECT-NONE. FUNCTION PERFORMED BY THE PRIMARY SYSTEM (60/C PU SYSTEM). CORRECTIVE ACTION-UNKNOWN							894009
P.U./LOADING-ACOUS-A/B LOADING PROBE	AA60-0046/81-48N-01-27 FUEL OVERFILL PROBES	COMPOSITE-FRD/DPL	27D 501001	5748-1	YES NO		
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FUEL OVERFILL PROBES FAILED DURING AN ATTEMPTED FUEL TANKING. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. LACK OF FUEL OVERFILL INDICATION. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.							894010
P.U./LOADING-ACOUS-A/B LOADING PROBE	AA60-0046/81-48N-01-27 FUEL PROBE	COMPOSITE-FRD/DPL	27D 590928	5748-1	YES NO		
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FUEL 99.9 PERCENT PROBE FAILED DURING AN ATTEMPTED FUEL TANKING TEST. SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. LACK OF 99.9 PERCENT FUEL INDICATION. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B LOADING PROBE	PTA8239/PS-4CO-01-22 SENSOR	COMPOSITE-B FACT	22D 590925	ETR	YES NO		
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. STATION 6 LOS SENSOR DID NOT UNCOVER. SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.							

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VEHICLE EFFECT-NONE.							093273
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B LOADING PROBE	32-404-84-24 ACOUSTICA FUEL AND LOZ LOADING PRO BES	CAPTIVE	240 990918	92	YES NO		090574
FAILURE MODE-THE 95 PCT, 100 PCT AND 100.2 PCT FUEL PROBES FAILED TO ACTIVATE DURING TANKING THE LOZ 95 PCT, 99.8 PCT, 100 PCT, AND 100.2 PCT PROBES FAILED TO OPERATE PROPERLY. THE ACOUSTICA PLCH OPERATED IN A MONITORING CAPACITY ONLY.							
SYSTEM EFFECT-IMPROPER DISCRETE. UNABLE TO TANK VEHICLE ACCURATELY IF ACOUSTICA PLCH WAS PRIMARY LOADING SYSTEM.							
VEHICLE EFFECT-COUNTDOWN DELAY.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B LOADING PROBE	32-405-CS-21 LOZ 95 AND 98 PCT. TANKING SENSORS	CAPTIVE	240 990902	SYC			090529
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE ACOUSTICA PLCH WAS USED AS PRIMARY TANKING. LOZ 90 PCT SENSOR ACTIVATED AT THE EXPECTED TIME. HOWEVER, WITH LOADING OF LOZ TO THE 95 PCT LEVEL, WAS INDICATED BY THE CONVAIR LOADING MONITOR. THE ACOUSTICAS 99.8 PCT LIGHT WAS ACTIVATED. AT THIS POINT, CONVAIR ELECTED TO PROCEED WITH LOADING USING THE CONVAIR SYSTEM. HOWEVER, THE ACOUSTICA 100 PCT AND 100.2 PCT LIGHTS OPERATED NORMALLY.							
SYSTEM EFFECT-NONE. POST TEST INVESTIGATION OF THE ACOUSTICA 95 AND 98 PCT CONTROL CIRCUITRY AND LANDLINE CABLING REVEALED A WIRING ERROR IN THE CONVAIR LANDLINE. IT WAS DETERMINED THAT THE 95 PCT LEVEL SENSOR WAS CONNECTED TO THE 99.8 PCT CONTROL UNIT THROUGH A WIRING ERROR IN THE TERMINATIONS AT TB-1030 TERMINAL BOARD. THE 99.8 PCT LEVEL SENSOR WAS SUBSEQUENTLY CONNECTED TO THE 95 PCT CONTROL UNIT.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-CONNECTED THE 95 AND 98 PCT LOZ LEVEL SENSORS TO THEIR CORRECT CONTROL UNIT LIGHT.							
P.U./LOADING-ACOUS-A/B LOADING PROBE	FTA5017/P1-401-00-11 PROBE	PRP	110 990714	ETR	YES NO		093260
FAILURE MODE-PREMIATURE OPERATION. THE NUMBER 1 LOZ PROBE BRIEFLY INDICATED AN UNCOVERING AT CUTOFF, WHICH OCCURRED AT 1.4 SECONDS OF ENGINE OPERATION. NORMAL UNCOVERING EXPECTED AFTER ABOUT 5 SECONDS OPERATION.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							



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P.U./LOADING-ACOUS-A/B LOADING PROBE	89C-4583 FUEL LEVEL TRANSDUCER	UTP-PET 27-04238-3				YES ACOUSTICA 100290-1	890203
FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE THE RESONANT VIBRATION PHASE OF THE 18PT TEMP TEST PARA 5.2-5.3 THE MEASURED RESONANT FREQUENCY WAS 85.3 KCPS SPEC. RANGE IS 78 TO 89 KCPS.							
CORRECTIVE ACTION-A CLASS 1 ECP UNDER MAP M031809 WILL DO THE FOLLOWING-CREATE NEW SPEC FOR PZT CRYSTAL TRANSDUCERS -ELIMINATE MASS LOADING - SURVEY PZT TRANSDUCERS S/N 3030086 AND ON TO VENDOR - INITIATE 100-PERCENT X-RAY INSP OF TRANSDUCERS - PERFORM DET ON PZT TRANSDUCERS - VERIFY COMPATIBILITY WITH EXISTING CONTROL UNIT PERCENT							
P.U./LOADING-ACOUS-A/B STILLWELL	P4-TBN-01-5302 SENSOR	COMPOSITE-PRD/DPL	5302 860124	ETR14	YES ACOUSTICA NO		890386
FAILURE MODE-ACOUSTICA SENSOR STATIONS 5 AND 6 ON FUEL STRING A DISPLAYED ERRATIC BEHAVIOR. PROBLEM RESOLVED TO BE CAUSED BY EXTERNALLY ADDED EQUIPMENT TO MEASURE SENSOR IMPEDANCE AND/OR A VIBRATION ENVIRONMENT CREATED BY FUEL RAPID LOAD.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.							
VEHICLE EFFECT-TEST DELAY.							
CORRECTIVE ACTION-NONE PLANNED-PROBLEM RESOLVED TO BE ASSOCIATED WITH LOADING AND NOT A FLIGHT PROBLEM.							
P.U./LOADING-ACOUS-A/B STILLWELL	GD/CZM85-031-DA1082- 13 LOX SENSOR, STATION 6	COMPOSITE-PRD/DPL	7113 851102	WTR	NO YES		890760
FAILURE MODE-ERRATIC OPERATION. DURING LOX DRAIN STATION 6 INDICATED WET 2.75 SEC AFTER GOING DRY. THE WET INDICATION WAS PRESENT FOR 1.5 SEC. IT IS BELIEVED THAT A DRIP IN LOX TANK ULLAGE PRESSURE DUE TO NORMAL BOILOFF VALVE CYCLING CAUSED A LIQUID LEVEL INCREASE IN THE STATION 6 SENSITIVE TUBE BY RELIEVING ULLAGE PRESSURE ON THE TUBE ABOVE THE P ROBE. IT SHOULD BE NOTED THAT THE OTHER POSSIBILITY IS CLASSED AS A PRIMARY FAILURE.							
SYSTEM EFFECT-ERRATIC OPERATION.							
VEHICLE EFFECT-COMPOSITE DELAYED.							
CORRECTIVE ACTION-LOX SENSOR STRING WAS SWITCHED.							
P.U./LOADING-ACOUS-A/B STILLWELL	GD/CZM85-031-DA1082 LOX STATION 6 SENSOR	COMPOSITE-PRD/DPL	7113 851102	WTR	YES ACOUSTICA YES 102320		
FAILURE MODE-FAIL DURING OPERATION. DURING LOX DRAIN, THE STATION 6 LOX SENSOR INDICATED WET 2.75 SECONDS AFTER GOING DRY (DRY INDICATION WAS NORMAL). PROBABLE CAUSE IS LIQUID LEVEL INCREASE IN SENSITIVE TUBE DUE TO CYCLING OF BOILOFF VALVE WHICH RELIEVED ULLAGE PRESSURE ON TUBE ABOVE THE SENSOR.							

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CONVAIR DIVISION

15 JUN 1966

DIFFICULTIES REVIEW-PROPELLANT UTIL LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
<p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. SUSTAINER FUEL VALVE INDICATED IMPROPER DISPLACEMENT. VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. POST-COMPOSITE TESTING REQUIRED. CORRECTIVE ACTION-AGE ZERO ERROR TIME SWITCH REPLACED.</p>						
P.U./LOADING-ACOUS-A/B STILLWELL	CD/AAGU83-001-27/FC-CO-01-0071-007 STATION 8 SENSOR	COMPOSITE-FACTORY	7107 641118	GD/A	NO NO	ACUSTICA
<p>FAILURE MODE-PREMAIURE OPERATION. PROPELLANT UTILIZATION STATION 8 ZERO ERROR TIME OCCURRED 30 SECONDS EARLY. THIS CONDITION REPEATED ON THE SECOND COMPOSITE. THIS CONDITION ATTRIBUTED TO A VIBRATION SENSITIVE AGE SWITCH. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. SUSTAINER FUEL VALVE INDICATED IMPROPER DISPLACEMENT. VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. COMPOSITE RETESTS REQUIRED. CORRECTIVE ACTION-SWITCH WAS REPLACED AND SHOCK MOUNTED.</p>						
P.U./LOADING-ACOUS-A/B STILLWELL	GD/BKFE64-043-84-701-00-7103 LOX SENSOR NUMBER 8	FLIGHT	7103 640710	WTR	YES NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME, INDICATING EITHER A SENSOR FAILURE OR AN OPEN IN THE CIRCUITRY BET WEEN THE SENSOR AND THE COMPUTER. SYSTEM EFFECT-OPERATION DOES NOT START. THE LOX SENSOR AT STATION 9 FAILED TO INDICATE UNCOVERING, THUS THE ERROR TIME AT STATION 8 WAS UNABLE TO BE DETERMINED BY THE COMPUTER. THE VALVE RE-SET TO NOMINAL 12 SECONDS AFTER THE FUEL SENSOR UNCOVERED IN ACCORDANCE WITH FAIL-SAFE FEATURE OF THE COMPUTER VEHICLE EFFECT-NONE. THE EXACT EFFECT ON RESIDUALS COULD NOT BE DETERMINED SINCE THE RESIDUAL ERROR AT STATION 8 COULD NOT BE DETERMINED. CORRECTIVE ACTION-NONE.</p>						
P.U./LOADING-ACOUS-A/B STILLWELL	AA83-0043/P1-88N-01-136 STILLWELL PROBE BOAS SEAL	COMPOSITE-FRD/DPL	1387 630723	CTR	YES NO	
<p>FAILURE MODE-LEAK EXTERNAL. UPON COMPLETION OF DUAL TANKING TEST A FUEL LEAK WAS DISCOVERED AT THE STILLWELL PROBE BOAS. SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-FUEL LEAK WAS REPAIRED BY REPLACEMENT OF SEAL WITH A TEFLON COATED SEAL.</p>						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B STILWELL	60/A63-0476/CI-303-00-89 SENSOR, LOX	FLIGHT	69E 630703	578C 85	YES NO	YES ACOUSTICA
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. STATION 3 LOX SENSOR FAILED WET AND DID NOT INDICATE UNCOVERING.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. FAILURE OF THE STATION 3 LOX SENSOR TO INDICATE UNCOVERING ESSENTIALLY ACTED AS AN IMPROPER SIGNAL TO THE PU SYSTEM COMPUTER. AS A RESULT THE PU VALVE WAS HELD AT FULL-CLOSE FOR 12 SECONDS FOLLOWING STATION 3 FUEL SENSOR UNCOVERING AT 85.3 SECONDS AND THEN TO THE MALL POSITION UNTIL STATION 4 UNCOVERING.						
VEHICLE EFFECT-NONE. PROPELLANT RESIDUALS WERE NOT SIGNIFICANTLY AFFECTED.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/B STILWELL	AE62-0729/BS-404-00-09 ACOUSTICA SENSORS	FLIGHT	8D 620809	WTR 123	YES NO	YES ACOUSTICA
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOX SENSORS AT STATIONS 4 AND 5, AND FUEL SENSOR AT STATION 4.5 FAILED TO INDICATE UNCOVERING.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-NONE. OPEN LOOP ACOUSTICA FOR INSTRUMENTATION PURPOSES ONLY.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B STILWELL	AE62-0553 ACOUSTICA 90 PERCENT PROBE	COMPOSITE-FRD/DPL	127D 620509	WTR	YES NO	YES ACOUSTICA
FAILURE MODE-PREATURE OPERATION ACOUSTICA 90 PERCENT PROBE ACTIVATED PREMATURELY DUE TO A LEVEL SURGE IN THE STILL WELL.						
SYSTEM EFFECT-OPERATION TOO LONG.						
VEHICLE EFFECT-COUNTDOWN DELAYED.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/B STILWELL	AD61-0352/DAGS102-6MO-13-03 SENSOR	COMPOSITE-FRD/DPL	3F 611219	08TF2	YES NO	YES
FAILURE MODE-FAIL DURING OPERATION. FUEL LEVEL SENSOR FAILURE.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. ERRONEOUS FUEL LEVEL INDICATION.						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP TIME	SITE DIP TIME	PRI OTH	VENDOR NAME VENDOR PART NO
VEHICLE EFFECT-COUNTDOWN DELAY.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B STILWELL	AC-81-0090/81-804-A4-01 LOX SENSORS	CAPTIVE	1F 610901	SYC	YES NO	YES ACUSTICA
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. DURING LOX TANKING SENSOR 1 AND 6 FAILED TO LOAD. THESE SENSORS WE RE ON THE PRIMARY STRINGS.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B STILWELL	AC-81-0090/81-804-A4-01 LOX SENSOR	CAPTIVE	1F 610901	SYC	YES NO	YES ACUSTICA
FAILURE MODE-ERRATIC OPERATION. THE LOX SENSOR ON THE ALTERNATE STRING UNCOVERED AND COVERED 6 TIMES WITHIN ONE SEC OND.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B STILWELL	AE81-0242/82-401-00-89 FUEL SENSOR	FLIGHT	95D 610324	WTR 142	YES NO	YES ACUSTICA
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. FUEL SENSOR AT STATION 8 FAILED TO INDICATE UNCOVERING.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE-ACUSTICA FLOWN OPEN LOOP.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/B STILWELL	AE80-0338/81-408-00-60 SENSOR	FLIGHT	60D 600702	ETR 43	YES NO	YES ACUSTICA
FAILURE MODE-FAILURE TO OPERATE AT PRESCRIBED TIME. LOX SENSOR 2 DID NOT INDICATE UNCOVERY EITHER BECAUSE OF FAULT IN SENSOR OR SENSOR HARNESS.						
SYSTEM EFFECT-ERRATIC OPERATION. FAILURE OF LOX SENSOR 2 TO INDICATE UNCOVERY CAUSED ERROR IN COMPUTATION OF FLOW R						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
ATES BETWEEN STATIONS 1 AND 2, AND 2 AND 3.							897636
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-ACOUS-A/B STILLWELL	ETR-009/14-503-EL-3E STILLWELL, BOLT	CAPTIVE	1-48RIE WTR S 800403	YES NO			899341
FAILURE MODE-STRUCTURAL FAILURE-BOLT HOLDING STILLWELL FAILED AND PASSED THROUGH B1 ENGINE. TO IMPELLER.							
SYSTEM EFFECT-NONE. HOWEVER POSSIBLE LOSS OF STRUCTURAL INTEGRITY OF ENGINE COMPONENTS DUE TO INTRODUCED HARDWARE.							
VEHICLE EFFECT-POSSIBLE INADVERTENT DESTRUCT. BOLT HEAD ENTERED B1 LOX PUMP ADAPTER ASSEMBLY, IMPELLER AND DIFFUSER WERE DAMAGED.							
CORRECTIVE ACTION-ALL ANMC STILLWELL BOLTS WERE REPLACED WITH NAS 1001 BOLTS PER GMA 5171.							
P.U./LOADING-ACOUS-A/B STILLWELL	AZC-27-114-P3-401-00-31 LOX SENSOR	FLIGHT	SID 591208	13 214	YES NO	YES ACOUSTICA	897847
FAILURE MODE- FAILED TO OPERATE AT PRESCRIBED TIME-A 27 SEC PREMATURE UNCOVERING OF THE STATION SIX LOX PROBE OF CLOSURE LOOP ACOUSTICA SYSTEM. PROBE UNCOVERINGS PRIOR TO THIS WERE PROPER. THE PU VALVE DOES TO NULL WHEN A PROBE UNCOVERS EARLY. SINCE RESIDUAL PROPELLANT RATIO WAS SATISFACTORY AT TIME OF SENSOR UNCOVERING RESIDUAL RATIO REMAINED SATISFACTORY TO SUSTAINER CUT-OFF.							
SYSTEM EFFECT-NONE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-THE COMPUTER HAS SINCE BEEN REDESIGNED TO ELIMINATE PREMATURE SENSOR UNCOVERING.							
P.U./LOADING-ACOUS-A/B STILLWELL	AZC-27-055/P3-403-00-15 SENSOR	FLIGHT	SID 591124	ETR 48-1	YES NO	YES ACOUSTICA	899930
FAILURE MODE-PREMATURE OPERATION. LOX SENSORS 2, 4, 5 AND 6 INDICATED PREMATURE UNCOVERING. CAUSE UNKNOWN.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. FUEL SENSORS AT STATIONS 2, 4, 5 AND 6 WERE LOCKED OUT BY THE COMPUTER AS RESULT OF PREMATURE LOX SENSOR UNCOVERINGS.							
VEHICLE EFFECT-NONE. ACOUSTICA SYSTEM. OPERATED IN THE OPEN LOOP MODE DURING THIS FLIGHT.							
CORRECTIVE ACTION-UNKNOWN.							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING--ACOUS-A/B STILLWELL	A3C-27-079/P1-404-00-10 ACOUSTICA SENSORS	FLIGHT	18D 991008	ETR 41.9	YES NO	YES ACOUSTICA
FAILURE MODE--PREMATURE OPERATION. LOX SENSORS 2 AND 6 INDICATED PREMATURE UNCOVERING. CAUSE UNKNOWN.						
SYSTEM EFFECT--IMPROPER DISCRETE SIGNALS. FUEL SENSORS AT STATIONS 2 AND 6 WERE LOCKED OUT BY COMPUTER AS RESULT OF PREMATURE LOX SENSOR UNCOVERINGS.						
VEHICLE EFFECT--NONE. OPEN LOOP ACOUSTICA SYSTEM.						
CORRECTIVE ACTION--UNKNOWN.						
P.U./LOADING--ACOUS-A/B STILLWELL	31-411-85-09 ACOUSTICA SENSOR	CAPTIVE	90 990821	3YC 89.96	YES NO	
FAILURE MODE--PREMATURE OPERATION-- LOX PROBES L3 AND L5 UNLOADED PREMATURELY.						
SYSTEM EFFECT--NONE-- PU VALVE MOVED CORRECTLY TO HULL WHEN SENSORS P3 AND P5 WERE LOCKED OUT.						
VEHICLE EFFECT--NONE.						
CORRECTIVE ACTION--NONE.						
P.U./LOADING--ACOUS-A/B STILLWELL	FTAS071/P3-402-00-14 PROBE	PRP	14D 990726	ETR PLUS 1.8	YES YES	
FAILURE MODE--PREMATURE OPERATION. A FUEL PROBE UNCOVERING SIGNAL OCCURRED AT MAINSTAGE COMPLETE ALTHOUGH ACTUAL FUEL LEVEL WAS APPROXIMATELY 16 INCHES ABOVE THE PROBE. SIGNAL CAUSED BY AN ERROR DUE TO IMPROPER PRESSURE IN THE FUEL STILLWELL (OR ELECTRICAL TRANSIENT AT IGNITION).						
SYSTEM EFFECT--IMPROPER DISCRETE SIGNALS. IMPROPER OUTPUTS WERE GENERATED AS A RESULT OF AN ERRONEOUS FUEL PROBE UNCOVERING SIGNAL.						
VEHICLE EFFECT--NONE.						
CORRECTIVE ACTION--UNKNOWN.						
P.U./LOADING--ACOUS-A/B STILLWELL	32-413-87-02 SENSORS	CAPTIVE	2D 990618	3YC	YES YES	
FAILURE MODE--FAIL DURING OPERATION. CALCULATED FLOWRATES AND THE FLOWRATES BASED ON ACCEPTANCE TEST DATA DO NOT AGREE. POSSIBLE CAUSE IS A MALFUNCTION OF THE ACOUSTICA SENSORS.						
SYSTEM EFFECT--IMPROPER ANALOG SIGNALS. IMPROPER SENSOR UNCOVERY TIMES GIVES ERRONEOUS ANALOG SIGNALS TO THE COMPUTER.						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.							899039
P.U./LOADING-ACOUS-A/B STILWELL	32-410-85-02 SENSOR LUX 1	CAPTIVE	20 990826	BYC	YES NO		899034
FAILURE MODE-FAIL DURING OPERATION. LOX SENSOR 1 FAILED TO UNLOAD. SYSTEM EFFECT-NONE. ACOUSTICA SYSTEM OPERATED OPEN LOOP. VEHICLE EFFECT-NONE CORRECTIVE ACTION-UNKNOWN.							899031
P.U./LOADING-ACOUS-A/B STILWELL	WDE-59-0250-A/1A-302 FUEL SENSORS	CAPTIVE	9C 990327	WTR 2.63	YES ACOUSTICA NO		899030
FAILURE MODE-FAIL DURING OPERATION. DATA FROM THE MAIN AND ALTERNATE STRING FUEL SENSORS INDICATED MALFUNCTIONS OCCURRED IN BOTH STRINGS. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.							897990
P.U./LOADING-ACOUS-A/B STILWELL	14-404-81-80 P.U. PROBES	CAPTIVE	990304	WTR	YES ACOUSTICA NO		
FAILURE MODE-FAIL DURING OPERATION. TWO LOX (A) STRING SENSOR PROBES AND ONE FUEL (B) STRING SENSOR PROBE MALFUNCTIONED. SYSTEM EFFECT-ERRATIC OPERATION. VEHICLE EFFECT-NONE. SYSTEM WAS OPEN LOOP. CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B COMPUTER	60/C22H89-031-0A1042-/LA-7MO-01-71 LOX OSCILLATOR	COMPOSITE-PRD/DPL	7113 891108	WTR	YES YES		
FAILURE MODE-ERRATIC OPERATION. DURING LOX DRAIN STATION L-6 INDICATED NET 2.75 SEC AFTER GOING DRY. THE NET INDICATION WAS PRESENT FOR 3.8 SEC. THIS COULD BE CAUSED BY A LOX OSCILLATOR FAILURE. IT SHOULD BE NOTED THAT THE OTHER POSSIBILITY IS CLASSIFIED AS A SECONDARY FAILURE RESULTING FROM A NORMAL SYSTEM OPERATION.							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-COMPOSITE DELAYED.						
CORRECTIVE ACTION-PU CANNISTER WAS REPLACED.						
P.U./LOADING-ACOUS-A/B COMPUTER	60C/Z2H85-031-DA1062 LOX OSCILLATOR	COMPOSITE-FRD/DPL	7113 651102	WTR	YES YES 102480	YES ACOUSTICA YES 102480
FAILURE MODE-FAIL DURING OPERATION. DURING LOX DRAIN, THE STATION 8 LOX SENSOR INDICATED WET 2.75 SECONDS AFTER GOING DRY (DRY INDICATION WAS NORMAL). POSSIBLE EXPLANATION COULD ATTRIBUTE THE TIME SHARED OSCILLATOR DROPOUT TO A LOX OSCILLATOR FAILURE.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-REPLACED COMPUTER.						
P.U./LOADING-ACOUS-A/B COMPUTER	60C/BKFS-085/P4-701-00-3501 VALVE	FLIGHT	5301 651023	ETR 83	YES NO	YES NO
FAILURE MODE-FAIL DURING OPERATION. PU VALVE POSITION MEASUREMENTS P9300 AND U13V DISPLAYED SINUSOIDAL VALVE OSCILLATIONS OF SMALL MAGNITUDE AT APPROXIMATELY 0.4 CPS, FROM STATION 3 TO STATION 8 UNCOVERING TIMES. THE PU VALVE WAS ON THE CLOSED SIDE OF NORMAL DURING THIS INTERVAL. CAUSE UNKNOWN.						
SYSTEM EFFECT-ERRATIC OPERATION. LOW ORDER VALVE OSCILLATION. SIMILAR OSCILLATION WERE SEEN 5 TIMES DURING CHECK-OUT. SIMILAR OSCILLATIONS SEEN DURING CHECK-OUT OF 7103 AND DURING FACTORY TESTING OF 7112.						
VEHICLE EFFECT-NONE. NO EFFECTS WERE NOTED IN SUSTAINER CUTOFF PROPELLANT RESIDUALS.						
CORRECTIVE ACTION-NONE AT THIS TIME. MOCK-UP TESTING TO INVESTIGATE 7104 PU PROBLEM HAS BEEN COMPLETED AND THE DATA UNDER ANALYSIS. THIS ANOMOLY MIGHT BE RESOLVED AFTER THIS DATA HAS BEEN COMPLETELY ANALYSED AND CONCLUSIONS REACHED.						
P.U./LOADING-ACOUS-A/B COMPUTER	60C/Z2H85-030-DA1061-/LA-7MO-02-71 10	COMPOSITE-FRD/DPL	7110 650924	WTR	YES NO	YES NO
FAILURE MODE-ERRATIC OPERATION. DURING THE DPL UNEXPLAINED TRANSIENTS WERE NOTED ON MEASUREMENT U306V (ERROR TIME PROPORTIONAL COIL VOLTAGE).						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-COMPUTER WAS REPLACED.						



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	GD/C ACUS-001-42/PC-CO-01-0030-00 1 VALVE, PROPELLANT	COMPOSITE-FACTORY 5001 630809	5001 630809	FACTORY	YES NO	YES ACOUSTICA
<p>FAILURE MODE-FAIL DURING OPERATION.-PROPELLANT UTILIZATION TELEMETRY DATA AND SERVO FEEDBACK VOLTAGE INDICATED IMPR OPER DISPLACEMENT OF THE FUEL VALVE. FUEL VALVE INDICATED AT UPPER LIMIT AT STA 1(FUEL-FIRST 2.0 SEC ERROR TIME) RAT HER THAN THE LOWER LIMIT, TO THE LOWER LIMIT AT STA 3(LOS-FIRST 2.0 SEC ERROR TIME) RATHER THAN THE UPPER LIMIT, AND AT THE INTERMEDIATE UPPER POSITION AT STATION 5(FUEL-FIRST 0.8 SEC ERROR TIME) RATHER THAN THE INTERMEDIATE LOWER POSITION.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. SUSTAINER FUEL VALVE INDICATED IMPROPER DISPLACEMENT.</p> <p>VEHICLE EFFECT-COMPOSITE RESCHEDULED. SYSTEMS LEVEL AND COMPOSITE RETESTING REQUIRED.</p> <p>CORRECTIVE ACTION-THE COMPUTER WAS REPLACED.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	FTAS165/P4-7CO-04-3301 1	COMPOSITE-J FACT 5301 630713	5301 630713	ETR 43	YES NO	YES ACOUSTICA
<p>FAILURE MODE-FAIL DURING OPERATION. U112V, AA COUNTER OUTPUT, INDICATED AN ABRUPT SHIFT FROM NORMAL LEVEL 46PCT IBM TO 16PCT IBM AT 43 SECONDS AND AN ABRUPT SHIFT BACK TO 46PCT AT 37 SECONDS. THIS SHIFT WAS APPARENTLY THE RESULT OF A SPURIOUS TRIGGER OF ONE OR MORE STAGES OF THE SEVEN STAGE COUNTER DURING THE TRANSITION FROM SENSOR STATION 4 TO SENSOR STATION 5.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-THE COMPUTER WAS RETURNED TO VENDOR. IR 966993, PR-AD-698-30.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	TXNSCAPED808-M06050/P4-7CO-04-930 1 COUNTER	COMPOSITE-J FACT 5301 630713	5301 630713	ETR	YES NO	YES ACOUSTICA
<p>FAILURE MODE-ERRATIC OPERATION. ACOUSTICA COUNTER OUTPUT INDICATED ABRUPT SHIFT FROM 46 PERCENT TO 16 PERCENT AND BACK AGAIN. DISCREPANCY APPARENTLY WAS THE RESULT OF A SPURIOUS TRIGGER OF ONE OR MORE STAGES OF THE SEVEN STAGE ERROR COUNTER WHILE SWITCHING FROM STATION 4 TO STATION 5.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-COMPUTER TO BE IND AND CONDITION WILL BE INVESTIGATED.</p>						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	TURNSCAP:434D-M00089/P4-7CD-03-930 COMPOSITE-J 1 COUNTER	FACT	9301 650709	ETR	YES NO	ACOUSTICA NO 102480-3
<p>FAILURE MODE-ERRATIC OPERATION. TRANSIENTS AT UNBILICAL EJECTION CAUSED SPURIOUS TRIGGER SIGNAL TO THE SENSOR STATION ON COUNTER CIRCUIT, RESULTING IN THE SKIPPING OF STATION 2.</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START. SENSOR STATION 2 WAS NOT MONITORED.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	GDC/ZING.-019-DA1047-/L4-TWO-01-71 COMPOSITE-FRD/DPL 07 IGNITER	7107 650419	WTR	YES NO		
<p>FAILURE MODE-FAILURE TO OPERATE AT PRESCRIBED TIME. THE LOS MONOSTABLES WOULD NOT FIRE WHEN THE COMPUTER WAS RESET.</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED.</p> <p>CORRECTIVE ACTION-REPLACE COMPUTER.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AGUS-001-39/FC-CO-01-0071-013 VALVE, PROPELLANT	COMPOSITE-FACTORY 7113 650408	FACTORY	YES NO		
<p>FAILURE MODE-FAILED DURING OPERATION. THE SUB-TAINER FUEL VALVE TRAVELED TO CLOSED POSITION WHEN AN OPEN CONDITION WAS EXPECTED.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. SUSTAINER FUEL VALVE WENT TO CLOSE POSITION WHEN OPEN CONDITION WAS EXPECTED.</p> <p>VEHICLE EFFECT-COMPOSITE RE-SCHEDULED. POST - COMPOSITE TESTING REQUIRED.</p> <p>CORRECTIVE ACTION-DISCREPANCY COULD NOT BE DUPLICATED, HOWEVER, THE COMPUTER WAS REPLACED.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	GDC/BK65-015/LS-702-00-7104 VALVE, PROPELLANT	FLIGHT 7104 650312	WTR	YES NO		
<p>FAILURE MODE-FAIL DURING OPERATION. ACOUSTICA VALVE POSITION FEEDBACK (U13V) INDICATED ABNORMAL PU VALVE RESPONSE TO THE ERROR COUNTER COMMAND (U13V) AT STATION 3. ABNORMAL VALVE RESPONSE NOT SUPPORTED BY PU VALVE POSITION DATA (P930D) AND THEREFORE CONSIDERED ERRONEOUS INDICATION CAUSED BY MALFUNCTION IN PU VALVE POSITION FEEDBACK CIRCUITRY.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION. ERRONEOUS INDICATION OF PU VALVE MOVEMENTS BY U13V FOLLOWING STATION 3 UNCOVERING</p>						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
<p>ONLY.</p> <p>VEHICLE EFFECT-NONE. THE PROBLEM APPARENTLY CORRECTED ITSELF PRIOR TO STATION 4 UNCOVERING AND WAS NOT REPEATED FOR THE REMAINDER OF FLIGHT. THERE WAS NO DETRIMENTAL EFFECT ON OVER-ALL SYSTEM PERFORMANCE.</p> <p>CORRECTIVE ACTION-TESTING OF PU SYSTEM (TCP 8478). TESTING INCLUDES 1) VIBRATION TESTING OF PU CANISTER, 2) PU SYSTEM TESTS ON FUNCTIONAL MOCKUP AND 3) IMPEDANCE MEASUREMENTS OF 8 FEEDBACK TRANSDUCERS, AS A RESULT OF RECURRING P830 D PROBLEM, ROCKETDYNE, IS REDESIGNING THE PU VALVE PROTRACTOR, TRANSDUCER MOUNT AND THEIR LINKAGE TO PU VALVE SHAFT.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	50A-AP264-052/E1-603-00-110	FLIGHT	110F 640807	576E 0.	YES NO	ACOUSTICA ACA1088
<p>FAILURE MODE-OUT OF SPECIFICATION OR TOLERANCE. THE PU COMPUTER WAS NOT CALIBRATED PROPERLY TO THE PU VALVE ANGLE SETTINGS. PU VALVE WAS NOT POSITIONED PER THE ERROR SIGNAL.</p> <p>SYSTEM EFFECT-NONE. IMPROPER CALIBRATION OF THE PU VALVE ANGLE TOGETHER WITH A FUEL RICH BURNING BOOSTER ENGINE RESULTED IN NEAR DEPLETION OF FUEL.</p> <p>VEHICLE EFFECT-NONE. AT SECO 29 POUNDS OF FUEL REMAINED WHICH WOULD PERMIT ONLY AN ADDITIONAL 0.36 SECONDS OF SUSTAINED OPERATION.</p> <p>CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	50A-AP264-052/E1-603-00-110	FLIGHT	110F 640807	576E 200	YES NO	ACOUSTICA ACA1088
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. PU COMPUTER FAILED TO RETURN THE PU VALVE TO NOMINAL UPON SENSING A STATION 5 FUEL-ONLY UNCOVERING.</p> <p>SYSTEM EFFECT-NONE. WOULD NORMALLY CAUSE IMPROPER UTILIZATION OF PROPELLANTS. ON THIS FLIGHT IT INADVERTENTLY HELPED TO COMPENSATE FOR FUEL DEPLETION WHICH WAS BEING CAUSED BY IMPROPER CALIBRATION OF THE COMPUTER AND THE PU VALVE.</p> <p>VEHICLE EFFECT-NONE. AT SECO 29 POUNDS OF FUEL REMAINED.</p> <p>CORRECTIVE ACTION-NO CORRECTIVE ACTION TAKEN. BECAUSE OF LACK OF INSTRUMENTATION, THE CAUSE OF THE FAILURE COULD NOT BE DETERMINED.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	PTA8443/P1-8CD-03-137 IGNITER	COMPOSITE-J FACT	137F 640326	ETR NO	YES NO	
<p>FAILURE MODE-OUT OF TOLERANCE. WHEN THE LOS MONOSTABLE ACTIVATED AT STATION ONE, THE 2 SECOND MONOSTABLE WAS TRIGGERED PREVENTING ACTIVATION OF THE FUEL MONOSTABLE WHICH NORMALLY OCCURS SIMULTANEOUSLY WITH THE LOS MONOSTABLE.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.</p>						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE							997469
CORRECTIVE ACTION-CHANGED COMPUTER.							
P.U./LOADING-ACOUS-A/B COMPUTER	DE-6MO-01-43	COMPOSITE-FRD/DPL	45F 630806	081F2	YES NO	YES ACOUSTICA	994936
FAILURE MODE-ERRATIC OPERATION. COMPUTER STEPPED TO STA 7 AT POWER ON AND REMAINED THERE.							
SYSTEM EFFECT-ERRATIC OPERATION. UNUSUAL STA UNCOVERY TIMERS OBSERVED DURING THE DRAIN SEQUENCE.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-COMPUTER REPLACED.							
P.U./LOADING-ACOUS-A/B COMPUTER	AX83-0003-135F/PC-CO-01-0011-033 COUNTER	COMPOSITE-FACTORY	135F 630809	FACTORY	YES NO		998403
FAILURE MODE-FAIL DURING OPERATION. TELEMETRY MEASUREMENT U12V (AA COUNTER OUTPUT) INDICATED AN UNEXPECTED COUNTER OUTPUT TO WHICH THE FUEL VALVE RESPONDED. ALSO THE PU VALVE DID NOT CLOSE COMPLETELY AT SUSTAINER CUTOFF.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-COMPOSITE RESCHEDULED. SYSTEM AND COMPOSITE RETESTING WAS PERFORMED.							
CORRECTIVE ACTION-THE COMPUTER WAS REPLACED.							
P.U./LOADING-ACOUS-A/B COMPUTER	AX83-0003-135F/PC-CO-01-0011-031 OSCILLATOR, UMBILICAL CONNECTOR	COMPOSITE-FACTORY	135F 630301	FACTORY	NO NO		998403
FAILURE MODE-OUT OF TOLERANCE. REFERENCE LEVEL OF TELEMETRY MEASUREMENT U134X (ACA TIME SHARED OSCILLATOR) WAS 80 P ER CENT 18W WHEN APPROXIMATELY 0 PER CENT 18W WAS EXPECTED. CAUSED BY A FAULTY AGE UMBILICAL CABLE WHICH CAUSED INDU CTIVE PICK-UP.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAYED OR RESCHEDULED. COMPOSITE RETEST REQUIRED.							
CORRECTIVE ACTION-DEFECTIVE AGE UMBILICAL CABLE WAS REPLACED. SUBSEQUENT COMPOSITE RETEST VERIFIED PROPER OPERATION							
P.U./LOADING-ACOUS-A/B COMPUTER	AX83-0003-135F/PC-CO-01-0011-031 TIME SHARED OSCILLATOR	COMPOSITE-FACTORY	135F 630301	FACTORY	YES NO		
FAILURE MODE-ERRATIC OPERATION. TELEMETRY MEASUREMENT U134X (ACA TIME SHARED OSCILLATOR) INDICATED AN EXTRANEIOUS LO 2 (ONLY) SIGNAL AT 93 SECONDS OF THE TEST. EXACT CAUSE OF FAILURE WAS NOT DETERMINED.							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
990404						
SYSTEM EFFECT-NONE. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-THE EXTRANEOUS LOX SIGNAL COULD NOT BE DUPLICATED, DID NOT RECUR DURING SUBSEQUENT MISSILE TESTS AND WAS, THEREFORE, CONSIDERED ACCEPTABLE.						
P.U./LOADING-ACOUS-A/B COMPUTER	A0J83-0017/B2-401-00-39. IGNITER	FLIGHT	390 830129	WTR 7	YES NO	YES ACOUSTICA NO 101670-2
990689						
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. THERE WERE NO INDICATIONS OF ACOUSTICA STATION SENSOR LEVEL UNCO VERINGS UNTIL 99.4 SECONDS. THE FUEL ONLY MONOSTABLE MULTIVIBRATOR ACTIVATED AT 99.57 SECONDS, BUT DEACTIVATED 2.4 8 SECONDS LATER, INSTEAD OF AFTER THE NORMAL 12 SEC. NO OTHER SENSOR UNCOVERINGS NOTED. SYSTEM EFFECT-CAUSE UNKNOWN. IMPROPER DISCRETE SIGNALS. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-UNKNOWN.						
993726						
P.U./LOADING-ACOUS-A/B COMPUTER	AA-62-0104/P1-68N-01-18 ACOUSTICA PU COMPUTER OSCILLATOR	COMPOSITE-FRD/DPL	18F 821030	ETR	YES NO	YES ACOUSTICA NO 101670-2
FAILURE MODE-OUT OF TOLERANCE. DURING THE FUEL TANKING, THE PU COMPUTER HAD LOW OUTPUT FROM THE TIMED SHARED OSCILL ATOR. SYSTEM EFFECT-OPERATION TOO LOW. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-COMPUTER WAS REPLACED WITH A BACKUP.						
P.U./LOADING-ACOUS-A/B COMPUTER	A0J62-0007/P1-601-00-7 MONOSTABLE MULTIVIBRATORS	FLIGHT	7F 820813	ETR 224	YES NO	
990689						
FAILURE MODE-FAIL DURING OPERATION. AN IMBALANCE EXISTED IN THE LOX AND FUEL MONOSTABLE MULTIVIBRATOR RECOVERY TIME S, WHICH BECAME EVIDENT ONLY WHEN STATION 6 LOX AND FUEL SENSORS UNCOVERED NEARLY SIMULTANEOUSLY. RECOVERY TIME DIFF ERENCE WAS 1.8 SECONDS, LOX PRECEDING FUEL. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE COMPUTER FAILURE GAVE A CONTINUING LOX RICH ERROR OUTPUT FROM THE ERROR TIME COUNTER, AND THE PU VALVE WAS HELD AT THE CLOSED LIMIT FROM 248.83 SECONDS TO 248.86 SECONDS. THIS RESULTED IN A PROPELLANT RESIDUAL ERROR OF 687 POUNDS OF FUEL. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-RECOVERY TIME OF THE MONOSTABLE MULTIVIBRATORS WAS CHANGED TO 0.8 SECONDS BY ACOUSTICA ASSOCIATES						

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SYSTEM SUO-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-ACOUS-A/B COMPUTER	AE62-0731/02-801-00-57 UMBILICAL CONNECTOR	FLIGHT	57F 820810	08172 1-0	YES NO		898429
<p>FAILURE MODE-ERRATIC OPERATION-DURING EJECTION A SPURIOUS SIGNAL WAS APPARENTLY SENT TO THE ACOUSTICA COMPUTER FROM THE UMBILICAL CONNECTOR WHILE THE RESET SIGNAL WAS BEING SENT TO THE COMPUTER.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION-THE COMPUTER RESPONDED TO THE SPURIOUS SIGNAL BY STEPPING FAST THE STATION 1 POSITION ON PREVENTING THE PU SYSTEM FROM RECEIVING STATION 1 SENSOR UNCOVERED INFORMATION. THIS RESULTED IN THE PROPELLANT UTILIZATION VALVE REMAINING IN THE NOMINAL POSITION UNTIL STATION 2 SENSORS UNCOVERED.</p> <p>VEHICLE EFFECT-NONE-PREATURE FLIGHT TERMINATION PRECLUDED ACCURATE EVALUATION OF PU SYSTEM OPERATION.</p> <p>CORRECTIVE ACTION-A CAPACITOR WAS INSTALLED IN THE RESET CIRCUITRY (TO PREVENT INTERACTION BETWEEN UMBILICAL RELEASE AND THE ACOUSTICA COMPUTER) OF FUTURE 081F-1 AND 081F-2 MISSILES.</p>							
P.U./LOADING-ACOUS-A/B COMPUTER	AE62-0729/83-404-00-08 COUNTER	FLIGHT	8D 820808	WTR	NO NO	ACOUSTICA	893031
<p>FAILURE MODE-PREATURE OPERATION. STATION COUNTER STEPPED FROM STATION 1 TO STATION 2 DUE TO SPURIOUS SIGNAL GENERATED WHEN UMBILICALS WERE EJECTED.</p> <p>SYSTEM EFFECT-NONE. FIXED PU VALVE. NO CORRECTION MADE FOR STATION 1 SENSOR, AND DATA FOR DETERMINATION OF PROPELLANT FLOW RATES WAS LOST.</p> <p>VEHICLE EFFECT-NONE. OPEN LOOP ACOUSTICA.</p> <p>CORRECTIVE ACTION-ACOUSTICA RECOMMENDED INSTALLATION OF CAPACITOR IN AFFECTED CIRCUIT.</p>							
P.U./LOADING-ACOUS-A/B COMPUTER	AA62-0074/P1-600-02-07 COUNTER	COMPOSITE-S FACT	7F 820216	ETR	YES NO	ACOUSTICA	894098
<p>FAILURE MODE-PREATURE OPERATION. AT T-O ON FACT TEST THE COMPUTER WAS TRIGGERED INTO STATION 2 AND COUNTED TO THE LIMIT. BELIEVED DUE TO SENSITIVITY OF COMPUTER TO TRANSIENT AT UMBILICAL EJECTION. PROBLEM HAD OCCURRED ON PREVIOUS FACT ALSO.</p> <p>SYSTEM EFFECT-OPERATION STARTS TOO EARLY. STATION 2 TRIGGERED PREMATURELY.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-COMPUTER TESTED FOR SENSITIVITY TO TRANSIENTS. NO UNUSUAL SENSITIVITY NOTED.</p>							

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	81YE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-ACOUS-A/B COMPUTER	A482-0074/P1-6CO-01-07 COUNTER	COMPOSITE-B FACT	7F 820202	ETR	YES NO	ACOUSTICA 101670-2	994037
FAILURE MODE-PREATURE OPERATION. AT T-O ON FACT TEST THE COMPUTER WAS TRIGGERED INTO STATION 2 AND COUNTED TO THE LIMIT. BELIEVED DUE TO SENSITIVITY OF COMPUTER TO TRANSIENT AT UNBILICAL EJECTION. PROBLEM OCCURRED AGAIN DURING SEC 040 FACT.							
SYSTEM EFFECT-OPERATION STARTS TOO EARLY. STATION 2 TRIGGERED PREMATURELY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-COMPUTER TESTED FOR SENSITIVITY TO TRANSIENTS. NO UNUSUAL SENSITIVITY NOTED.							
P.U./LOADING-ACOUS-A/B COMPUTER	A482-00-75/83-401-00-132 SENSOR	FLIGHT	1320 820123	WTR 0	NO NO	ACOUSTICA	997311
FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. LOX AND FUEL STATION 1,2,3, AND 4 SENSORS DID NOT INDICATE UNCOVERING. ATTRIBUTED TO FAILURE OF THE A.C.E. RESET SIGNAL FROM REACTING THE COMPUTER PRIOR TO IGNITION/LIFTOFF DUE TO WIRING DISCONTINUITY BETWEEN A.C.E. AND CANISTER.							
SYSTEM EFFECT-OPERATION DOES NOT START. NORMAL SYSTEM OPERATION WAS PRECLUDED UNTIL SENSORS 5 UNCOVERED.							
VEHICLE EFFECT-NONE. SYSTEM WAS FLOWN OPEN-LOOP.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-ACOUS-A/B COMPUTER	A482-0074/82-401-00-120 SENSOR	FLIGHT	1230 820117	WTR	YES NO	ACOUSTICA	997317
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. LOX AND FUEL STATIONS 1 THROUGH 5 SENSORS DID NOT INDICATED UNCOVERING. IT IS THOUGHT THAT THE PROBLEM EXISTS EITHER IN THE ACOUSTICA SYSTEM OR THAT THE RESET SIGNAL FAILED TO REACH THE COMPUTER PRIOR TO IGNITION. STATION SIX APPARENTLY OPERATED SATISFACTORILY.							
SYSTEM EFFECT-OPERATION DOES NOT START.							
VEHICLE EFFECT-NONE. SYSTEM WAS FLOWN OPEN-LOOP.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B COMPUTER	A4141-0-8-21/FC-6CO-03-022 COUNTER	COMPOSITE-FACTORY	21F 820109	FACTORY	YES NO	ACOUSTICA	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME- TEST DATA INDICATED THAT THE COMPUTER FAILED TO SENSE ANY FUEL ERR OR SIGNALS FROM THE AGE.							
SYSTEM EFFECT-OPERATION DOES NOT START-COMPUTER FAILED TO SENSE ERROR SIGNALS FROM AGE.							

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SYSTEM SUJ-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VENDOR PART NO
VEHICLE EFFECT-COMPOSITE RESCHEDULED-COMPOSITE WILL HAVE TO BE RE-RAN. CORRECTIVE ACTION-THE COMPUTER WAS (R/D IR 1791561).						
P.U./LOADING-ACOUS-A/B COMPUTER	ARI41-0-3-18/PC-8CO-03-018 VALVE, CIRCUITRY	COMPOSITE-FACTORY	18F 820108	FACTORY	YES ACOUSTICA NO 101870-2	
FAILURE MODE-OUT OF TOLERANCE. THE P.U. VALVE FEEDBACK VOLTAGE WAS MARGINAL ON TLM MEASUREMENT U113U WHEN THE VALVE WAS AT THE HALF CLOSED POSITION. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. VEHICLE EFFECT-COMPOSITE RESCHEDULED. COMPOSITE RE-RUN. CORRECTIVE ACTION-VALVE SERVO LOOP WAS RE-ADJUSTED.						
P.U./LOADING-ACOUS-A/B COMPUTER	AE61-1108/B2-403-00-33 MULTIVIBRATOR, LOX MONOSTABLE.	FLIGHT	53U 611129	WTR 21.9	YES ACOUSTICA NO	
FAILURE MODE-FAIL DURING OPERATION-STATION 1 LOX MONOSTABLE RECOVERED PREMATURELY AT 21.9 SECONDS AND WAS TRIGGERED AGAIN AT 28.3 SECONDS BEFORE RESETTING NORMALLY AT 30.4 SECONDS, AFTER THE FUEL MON STABLE RESET. REASON UNKNOWN. THE ACOUSTICA SYSTEM WAS FLOWN OPEN LOOP FOR INSTRUMENTATION PURPOSES ONLY. SYSTEM EFFECT-NONE. NO VALVE MOVEMENT WOULD RESULT FROM THIS DIFFICULTY. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/D COMPUTER	ARI41-0-3-14/PC-8CO-03-014 VALVE, CIRCUITRY	COMPOSITE-FACTORY	14F 611109	FACTORY	YES ACOUSTICA NO 101870-2	
FAILURE MODE-OUT OF TOLERANCE. THE P.U. VALVE FEEDBACK VOLTAGE OF 1.287 VOLTS WAS INDICATED FOR A HALF CLOSED POSITION WHEN 1.469 PLUS OR MINUS 0.177 VOLTS WAS EXPECTED. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. VEHICLE EFFECT-COMPOSITE DELAYED. POST COMPOSITE SYSTEM TEST REQUIRED TO RESET FEEDBACK VOLTAGE. CORRECTIVE ACTION-THE VALVE SETTINGS WERE READJUSTED.						



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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	AE61-0978/60AP3-301-00-30 COMPUTER	FLIGHT	30E 811105	ETR 47.42	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION BECAUSE OF THE INABILITY OF THE ACOUSTICA CA-1088 COMPUTER TO DIFFERENTIATE BETWEEN SIMULTANEOUS FUEL AND LOX SENSOR UNCOVERINGS. THE COMPUTER RESPONDED TO A LOX ONLY SIGNAL.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. AS A RESULT OF THE LOX ONLY SIGNAL, THE PU VALVE WAS POSITIONED AT THE OPEN LIMIT FOR 10 SECONDS. AFTER THE MULTIVIBRATOR RESET, THE VALVE WAS POSITIONED TO THE NOMINAL VALVE ANGLE.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-THE COMPUTER WAS REDESIGNED TO INTERPRET A SIMULTANEOUS UNCOVERING AS A ZERO ERROR AND THIS CHANGE WAS INCORPORATED ON ALL SLV-3 VEHICLES.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AE61-1027/FC-6CO-01-030 SWITCH-FUNCTION SELECTOR	COMPOSITE-FACTORY	30F 811028	FACTORY	NO	ACOUSTICA NO 101670-2
<p>FAILURE MODE-OUT OF TOLERANCE. ALL VALVE POSITION FEEDBACK VOLTAGE DATA WAS OUT OF TOLERANCE. DUE TO A FAULTY VOLTAGE FUNCTION SELECTOR SWITCH IN THE P. U. CHECKOUT SET.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TEST REQUIRED TO DETERMINE SOURCE OF PROBLEM.</p> <p>CORRECTIVE ACTION-AGE SWITCH WAS REPLACED.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	ARI41-0-3-11/FC-6CO-01-011 SENSOR-STATION COUNTER	COMPOSITE-FACTORY	11F 811017	FACTORY	NO	ACOUSTICA NO 101670-2
<p>FAILURE MODE-OUT OF TOLERANCE. FALSE SENSOR STATION POSITIONS WERE EVIDENCED ON THE SENSOR STATION POSITION METER. IT WAS FOUND THAT THE UNILICAL CABLE HAD A VOLTAGE PICKUP OF 25 VAC, WHICH CAUSED THE ERRONEOUS READING. THE CABLE WAS REPLACED. SINCE THE COMPUTER WAS SUBJECTED TO THIS HIGH VOLTAGE IT WAS REMOVED AND REPLACED.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS-THE EXTRANEOUS INDUCED VOLTAGE CAUSED FALSE STATION POSITIONS.</p> <p>VEHICLE EFFECT-COMPOSITE RESCHEDULED. COMPOSITE RE-RUN.</p> <p>CORRECTIVE ACTION-UNILICAL CABLE REPLACED AND COMPUTER REPLACED.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AE61-0936/FC-6CO-01-023 VALVE CIRCUITRY	COMPOSITE-FACTORY	23F 810927	FACTORY	NO	ACOUSTICA NO ACA-0107
<p>FAILURE MODE-OUT OF TOLERANCE. THE P.U. VALVE FEEDBACK VOLTAGES FOR THE ONE-HALF OPEN VALVE POSITION AND THE NOMINAL VALVE POSITION WERE OUT OF TOLERANCE. THE FEEDBACK VOLTAGES WERE RECORDED IN ERROR.</p> <p>SYSTEM EFFECT-NONE. RECORDED VALUES FOR VALVE FEEDBACK VOLTAGES WERE FOR OPEN POSITION AND VALVE WAS AT HALF-OPEN POSITION.</p>						

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SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
<p>08110N DUE TO OPERATOR ERROR.</p> <p>VEHICLE EFFECT-COUNTDOWN DELAYED. CORRECTIVE ACTION-NONE.</p> <p>CORRECTIVE ACTION-NONE.</p>							998294
P.U./LOADING-ACOUS-A/B COMPUTER	AE81-0798/P1-SBN-01-25 PU COMPUTER OSCILLATOR	COUNTDOWN 27-72253-1	25E 610823	ETR	YES NO	ACOUSTICA NO 101870-23/ND09 4	993910
<p>FAILURE MODE-FAILED TO OPERATE AT PRESCRIBED TIME. DURING LOX TANKING, THE STATION 3 SENSOR ON THE A LOX STRING AND STATION 2 SENSOR ON THE B LOX STRING FAILED TO INDICATE NET. THE MALFUNCTION WAS DUE TO A FAULTY OSCILLATOR IN THE PU SYSTEM.</p> <p>SYSTEM EFFECT-OPERATION DOES NOT START. LOX SENSORS ON BOTH STRINGS (A AND B) FAILED DURING LOX TANKING TEST.</p> <p>VEHICLE EFFECT-COUNTDOWN ABORTED AND RESCHEDULED. THE DPL ON THE NEXT DAY WAS RUN SPECIFICALLY TO TEST THE PU SYSTEM. THIS DPL WAS SUCCESSFUL.</p> <p>CORRECTIVE ACTION-COMPUTER 3/N 0084 REPLACED WITH 8/N 0088.</p>							993909
P.U./LOADING-ACOUS-A/B COMPUTER	AE81-0162/PC-9CO-01-030 COUNTER	COMPOSITE-FACTORY	30E 610505	FACTORY	YES NO	ACOUSTICA	993909
<p>FAILURE MODE-FAIL DURING OPERATION-AN UNEXPECTED FUEL ONLY UNLOADING WAS INDICATED AT APPROXIMATELY 85 SECONDS (STA TION 3) CAUSING ALL OTHER PROGRAMMED FUNCTIONS TO BE OUT OF SEQUENCE. COMPUTER IR/D AND FOUND TO BE FAULTY.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. UNEXPECTED SIGNAL OUTPUT.</p> <p>VEHICLE EFFECT-COUNTDOWN OR COMPOSITE DELAYED OR RESCHEDULED-COMPOSITE RE-RUN MADE.</p> <p>CORRECTIVE ACTION-COMPUTER IR/D AND REMOVED FROM VEHICLE.</p>							993908
P.U./LOADING-ACOUS-A/B COMPUTER	AE81-0081/PC-9CO-01-030 OSCILLATOR	COMPOSITE-FACTORY	30E 610411	FACTORY	NO NO	ACOUSTICA	993908
<p>FAILURE MODE-ERRATIC OPERATION. TELEMETRY MEASUREMENT U134X (AA TIME SHARED OSCILLATOR) EXHIBITED SPIKING OF UP TO 27 PCT IDW. THE VOLTAGE OUTPUT OF U134X WAS OF SUCH A LOW AMPLITUDE THAT IT WAS MASKED BY THE SPIKING. THE SPIKING WAS CAUSED BY LACK OF SHIELDING BETWEEN PIN P OF 804 U1P1 (ACOUSTICA CANISTER) AND TERMINAL 1190 OF TERMINAL BOARD 10 D IN THE POWER DISTRIBUTION TRAILER.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.</p> <p>VEHICLE EFFECT-COMPOSITE RESCHEDULED. POST COMPOSITE TESTING REQUIRED.</p> <p>CORRECTIVE ACTION-EQUIPMENT WAS MODIFIED TO PREVENT SPIKING.</p>							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM	TEST/REPORT NUMBER	DIP DATA SOURCE	VEHICLE	SITE	PRI	VENDOR NAME
SUB-SYSTEM	FAILED COMPONENT NAME	PART NUMBER	DATE	TIME	OTH	VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	ARI41-0-3-21/FC-8CO-01-081 COUNTER	COMPOSITE-FACTORY	21F	FACTORY	YES	ACOUSTICA
			610212		NO	
FAILURE MODE-OUT OF TOLERANCE. THE VALVE POSITION FEEDBACK VOLTAGE FOR HALF OPEN WAS 30 PERCENT GREATER THAN EXPECTED. MAX. DEVIATION IS 15 PERCENT. ALSO PU VALVE CLOSED AT STATION 5 WHEN IT SHOULD HAVE STOPPED AT THE HALF CLOSED POSITION. ALSO ERROR COUNTER OUTPUT RESPONDED FROM RESET TO THE LOWER LIMIT IN 0.8 SECONDS. EXPECTED RESPONSE WAS 1.0 SECONDS.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-COMPOSITE. RESCHEDULED. RETURN OF COMPOSITE MADE WITH OUT RECURRING THE PREVIOUS FAILURES.						
CORRECTIVE ACTION-COMPUTER REPLACED AND COMPOSITE REMAIN.						
P.U./LOADING-ACOUS-A/B COMPUTER	AA60-0134/P2-401-00-83 VALVE	COUNTDOWN	83D	ETR	YES	
			601110	-10200	NO	
FAILURE MODE-FAIL DURING OPERATION. U13V PU VALVE FEED BACK VOLTAGE INCORRECT.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT-NONE						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B COMPUTER	AE60-0538/P1-402-00-80 ERROR TIME COUNTER	FLIGHT	80D	ETR	YES	ACOUSTICA
			600702	146.9	NO	
FAILURE MODE-OUT OF SPECIFICATION. ERROR TIME COUNTER OPERATION 3.18 TO 1.91 SECONDS SHORT OF DESIGN VALUES POSSIBLY THROUGH FAULTY OPERATION OF VARIABLE FREQUENCY OSCILLATOR. UNCOVERY OF SENSOR F5 WAS LOCKED OUT BY SHORT COUNT KEEPING MONOSTABLE FROM TRIPPING AFTER F5 OSCILLATOR ACTIVATION.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. LOCKOUT OF UNCOVERY OF SENSOR F5 BY SHORT COUNT OF ERROR TIME COUNTER CAUSED SYSTEM TO REACT TO IMPROPER SIGNAL THUS FAILING TO CORRECT FOR ACTUAL FUEL-RICH CONDITION.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/B COMPUTER	AE60-0537/P2-402-00-87 COUNTER	FLIGHT	27D	ETR	YES	
			600687	183	NO	
FAILURE MODE-FAIL DURING OPERATION. DUE TO PU VALVE MOVEMENT DESIGN LIMITATIONS BETWEEN STATIONS 5 AND 6, THE STATION 6 ERROR COUNTER RESET NORMALLY BEFORE A LOW SENSOR UNCOVERING SIGNAL COULD BE UTILIZED.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. DUE TO THE LATE UNCOVERING OF STATION 6 THE PU VALVE WAS COMMANDED TO THE N						

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CONVAIR DIVISION

# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VEHICLE NAME VEHICLE PART NO
ORIGINAL ANGLE WHERE IT REMAINED UNTIL SUBSTANTIAL CUTOFF. THIS RESULTED IN A LOSS RICH ERROR OF 1833 POUNDS AT SECO.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/B COMPUTER	AE60-0239/FC-4CO-01-60 TIME SHARED OSCILLATOR	COMPOSITE-FACTORY	600	FACTORY	YES	ACOUSSTICA NO
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE TLM MEASUREMENT U134X INDICATED A LOSS FIRST CONDITION INSTEAD OF A FUEL FIRST, AND A FUEL FIRST WHEN A LOSS FIRST WAS EXPECTED. INVESTIGATION REVEALED THIS IRREGULARITY WAS CAUSED BY REVERSAL OF THE TIME SHARED OSCILLATOR SIGNALS IN THE COMPUTER.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THIS CONDITION WOULD CAUSE CORRECTIVE SIGNALS TO INCREASE ANY MIXTURE RATIO ERROR INSTEAD OF DECREASING IT.						
VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TESTING WAS PERFORMED WHICH INCLUDED NORMAL SYSTEMS TESTING AND A COMPLETE COMPOSITE PROGRAM. SYSTEM OPERATED SATISFACTORILY.						
CORRECTIVE ACTION-COMPUTER IR/D AND REPLACED.						
P.U./LOADING-ACOUS-A/B COMPUTER	AE60-019/FC-4CO-01-56 COUNTER	COMPOSITE-FACTORY	560	FACTORY	NO	ACOUSSTICA NO
FAILURE MODE-OUT OF TOLERANCE. TLM MEASUREMENT U125V (ACOUSSTICA COUNT OUTPUT NO. 1) AT SENSOR STA. NO. 6 WAS OUT OF TOLERANCE						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT-COMPOSITE DELAYED. POST COMPOSITE TEST REQUIRED TO SHOW PROPER OPERATION.						
CORRECTIVE ACTION-THE TEST EQUIPMENT WAS READJUSTED AND SUBSEQUENT TESTING INDICATED SATISFACTORY OPERATION.						
P.U./LOADING-ACOUS-A/B COMPUTER	AE60-0040/P3-402-00-49 MONOSTABLE MULTIVIBRATOR	FLIGHT	490	ETR	YES	ACOUSSTICA NO
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE MONOSTABLE MULTIVIBRATORS INDICATED THAT THE FIFTH FUEL SENSOR UNCOVERED 46 SECONDS EARLY AND THE SIXTH LOSS SENSOR UNCOVERED 46 SECONDS EARLY, AT 139.43 AND 106.38 SECONDS, RESPECTIVELY. THE CAUSE IS NOT KNOWN.						
SYSTEM EFFECT-OPERATION STOPS PREMATURELY. EARLY OPERATION OF BOTH MULTIVIBRATORS KEPT THE COMPUTER FROM CORRECTING PROPELLANT UTILIZATION RATES AND CAUSED A 490 POUND EXCESS LOSS RESIDUAL.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	AZC-27-119/P3-402-00-44. COUNTER	FLIGHT	44D 800126	ETR 47.5	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION. THE MONOSTABLE MULTIVIBRATOR CORRECTLY INDICATED A LOX FIRST ERROR TIME, BUT THE COUNTER COUNTED IN THE DIRECTION OF A FUEL FIRST UNCOVERING TIME, AT STATION 2.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE PU VALVE CLOSED AND INCREASED THE FUEL RICH ERROR.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-NONE.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AZC-27-119/P3-402-00-44 MONOSTABLE MULTIVIBRATOR	FLIGHT	44D 800126	ETR 134.15	YES NO	
<p>FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE MONOSTABLE MULTIVIBRATOR INDICATED THAT SENSOR L5 UNCOVERED 50 SECONDS EARLY AND SENSOR L6 UNCOVERED 93 SECONDS EARLY, AT 134.15 AND 146.80 SECONDS, RESPECTIVELY.</p> <p>SYSTEM EFFECT-OPERATION STOPS PREMATURELY. THE PU VALVE WENT TO FULL POSITION AND NO CORRECTION WAS MADE FOR THE FUEL RICH ERROR AFTER 134 SECONDS. THE FUEL RESIDUAL WAS CALCULATED TO BE IN EXCESS OF 500 POUNDS.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-NONE.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AZC-27-119/P3-402-00-44 ACOUSTICA COMPUTER BINARY COUNTER	FLIGHT	44D 800126	ETR 47	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION. AT ACOUSTICA STATION 2 THE MONOSTABLE MULTIVIBRATOR INDICATED A LOX-FIRST ERROR TIME E. HOWEVER THE COUNTER ERRONEOUSLY COUNTED IN THE DIRECTION OF A FUEL-FIRST UNCOVERING.</p> <p>SYSTEM EFFECT-DEPLETION OF LIQUID SUPPLY. THE PU VALVE WENT TO THE CLOSED LIMIT AND INCREASED THE FUEL RICH ERROR INSTEAD OF OPENING TO CORRECT FOR IT.</p> <p>VEHICLE EFFECT-NONE. EXCESSIVE RESIDUAL FUEL AT SECO HAD NO DETRIMENTAL EFFECT ON MISSION ACCOMPLISHMENT.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AC80-0003/81-411-C8-56 COUNTER	CAPTIVE	36D 800121	8YC	YES NO	
<p>FAILURE MODE-ERRATIC OPERATION. FOLLOWING STATION 3 UNCOVERING SPURIOUS LOX ONLY SIGNALS WERE RECEIVED BY THE COMPUTER SIGNALS INTRODUCED IN THE SIXTH CARD DELAY UNIT.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. ACOUSTICA PU SYSTEM WAS OPEN LOOP. SIMULATED PU VALVE WAS POSITIONED CORRECTLY AT THE NOMINAL POSITION.</p>						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER PAID COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF	SITE TIME DIF	PRI OTH	VENDOR NAME VENDOR PART NO	
VEHICLE EFFECT-NONE. CORRECTIVE ACTION-THE COMPUTER WAS REPLACED.							898903
P.U./LOADING-ACOUS-A/B COMPUTER	3-1615/81-409-B7-36 COUNTER	CAPTIVE	36D 591221	SYC 127	YES NO	YES ACOUSTICA	898901
FAILURE MODE-OUT OF TOLERANCE. THE STATION 4 NOMINAL VALVE POSITION WAS OUT OF TOLERANCE BY A MINIMUM OF 1.2 DEG. A YTRIBUTED TO AN INADEQUATE C-LIBRATION PROCEDURE FOR THE PU SYSTEM, AND AN INTERNAL COMPUTER CALIBRATION ERROR. THE COMPUTER WAS CALIBRATED FOR FLIGHT CONDITIONS INSTEAD OF STATIC CONDITIONS. SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. A LOX EXCESS OF 1500 POUNDS EXISTED AT SECO. VEHICLE EFFECT-NONE. CORRECTIVE ACTION-THE PROCEDURE WAS REVISED AND THE COMPUTER WAS RECALIBRATED.							893362
P.U./LOADING-ACOUS-A/B COMPUTER	A2M-27-429/7C-4CO-01-49	COMPOSITE-FACTORY	49D 591220	FACTORY	YES NO	YES ACOUSTICA	893362
SYSTEM EFFECT-OPERATION TOO LOW. SENSOR SIGNAL TOO LOW. BELIEVED CAUSED BY OPERATOR AND/OR EQUIPMENT MALFUNCTION. VEHICLE EFFECT-COMPOSITE DELAYED. POST-COMPOSITE TEST SHOWED NO EVIDENCE OF FAILURE. SYSTEM TEST PERFORMED SATISFAC TORILY. CORRECTIVE ACTION-NONE-FAILURE COULD NOT BE CONFIRMED.							897623
P.U./LOADING-ACOUS-A/B COMPUTER	A2C-27-115/P3-401-00-40 ACOUSTICA COMPUTER	FLIGHT	40D 591216	ETR 35	YES NO	YES ACOUSTICA	897623
FAILURE MODE-OUT OF SPECIFICATION. AFTER PROPER STATION 6 FUEL SENSOR UNCOVERING, ERROR COUNTER RESET AT 2-6 SECOND S INSTEAD OF AT EXPECTED 3.2 SECONDS. SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. EARLY ERROR COUNTER RESET RESULTED IN LOCKOUT OF LOX SENSOR AND FAILURE TO MAKE PROPER CORRECTION. VEHICLE EFFECT-NONE. OPEN-LOOP ACOUSTICA. CORRECTIVE ACTION-UNKNOWN.							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	AZC-27-115/P3-401-00-40 MULTIVIBRATOR	FLIGHT	400 591216	ETR 33	YES NO	YES ACOUSTICA
<p>FAILURE MODE-PREATURE OPERATION. MONOSTABLE INDICATED STATION 2 LOX SENSOR UNCOVERING 12 SECONDS EARLY AND STATION 5 FUEL SENSOR UNCOVERING 43 SECONDS EARLY. SINCE OSCILLATORS DID NOT INDICATE UNCOVERING, MONOSTABLE INDICATIONS MAY HAVE BEEN TRIGGERED BY SPURIOUS SIGNAL AND NOT BY SENSOR UNCOVERING.</p> <p>SYSTEM EFFECT-ERRATIC OPERATION. PREMATURE UNCOVERING INDICATIONS RESULTED IN IMPROPER CORRECTIONS AT STATIONS 2 AND 5.</p> <p>VEHICLE EFFECT-NONE. OPEN-LOOP ACOUSTICA.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	AZC-27-083/P3-48W-03-28 COMPUTER	COMPOSITE-FRD/DPL	280 591026	ETR	YES NO	YES ACOUSTICA
<p>FAILURE MODE-FAIL TO CEASE OPERATION AT PRESCRIBED TIMES. DURING DETANKING OF LO2 THE LOX SENSORS FOR STATIONS L1, L4 AND L5 DID NOT UNLOAD. AFTER DETANKING, RESISTANCE CHECKS WERE MADE AT PLUG 2 P1. THE TROUBLE WAS DETERMINED TO BE DUE TO LACK OF INSULATION BETWEEN COMPUTER CARTRIDGE AND OUTSIDE WALL.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	52-410-C7-2A MONOSTABLE MULTIVIBRATOR	CAPTIVE	240 591015	SYC 40	YES NO	YES ACOUSTICA
<p>FAILURE MODE-FAIL DURING OPERATION. MONOSTABLES L2 THROUGH L6 SWITCHED ERRONEOUSLY AND SPURIOUS TRIGGERS OF UNKNOWN ORIGIN.</p> <p>SYSTEM EFFECT-OPERATION STOPS PREMATURELY-STATION SENSORS P2 THROUGH P6 WERE LOCKED OUT BY THE COMPUTER AT RESET TIME RESULTING IN APPARENT LOX ONLY SIGNALS. COMPUTER RESPONSE TO THE APPARENT UNCOVERINGS WAS NORMAL AND THE PU VALVE WAS CORRECTLY POSITIONED FOR EACH SIGNAL RECEIVED.</p> <p>VEHICLE EFFECT-NONE. REDUNDANT SYSTEMS CAUSED PROPER OPERATION.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	PTAS181/P1-4CO-01-18 SENSOR	COMPOSITE-B FACT	180 590911	ETR	YES NO	YES
<p>FAILURE MODE-OUT OF SPECIFICATION. TELEMETERED DATA INDICATED ONLY 8 SENSOR STATION UNCOVERINGS WHEN THERE SHOULD HAVE BEEN SIX.</p>						

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE TIME DIF OTH	PRI OTH	VENDOR NAME VENDOR PART NO
<p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. ONLY FIVE SENSOR STATION UNCOVERING SIGNALS WERE RECEIVED.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-POST FACT INVESTIGATION AND TESTING INDICATED SATISFACTORY SYSTEM RESPONSE. NO FURTHER ACTION TAKEN. REASON FOR FAILURE UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	31-413-C8-09 COUNTER	CAPTIVE	9D 590501	BYC 31	YES NO	YES ACOUSTICA NO 50003600-101
<p>FAILURE MODE-PREATURE OPERATION. STATIONS 2 THROUGH 6 WERE STOPPED PREMATURELY BY ERRONEOUS LOW ONLY SIGNALS. ERRONEOUS SIGNAL PROBABLY ORIGINATED DOWNSTREAM OF THE TIME SHARED OSCILLATOR CIRCUIT.</p> <p>SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. PROPELLANT LEVELS WERE NOT PROPERLY CONTROLLED.</p> <p>VEHICLE EFFECT-NONE.</p> <p>CORRECTIVE ACTION-REPLACE COMPUTER.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	A2H-27-315/FC-4CO-07-28 COMPUTER	COMPOSITE-FACTORY	28D 59082Y	FACTORY	YES NO	
<p>FAILURE MODE-OUT OF TOLERANCE. FUEL FIRST TEST INDICATED AN OUT OF TOLERANCE CONDITION. PROBLEM CENTERED IN THE COMPUTER. THIS UNIT WILL BE REPLACED AT TEST SITE AND RETESTING DONE THERE.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS-ERROR TIMES WERE OUT OF TOLERANCE.</p> <p>VEHICLE EFFECT-COMPOSITE DELAYED.</p> <p>CORRECTIVE ACTION-UNKNOWN.</p>						
P.U./LOADING-ACOUS-A/B COMPUTER	A2H-27-315/FC-4CO-28	COMPOSITE-FACTORY	28D 590821	FACTORY	YES NO	YES ACOUSTICA NO
<p>FAILURE MODE-OUT OF TOLERANCE.-ERROR TIMES WERE OUT OF TOLERANCE.</p> <p>SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. SENSOR SIGNAL INDICATED OUT OF TOLERANCE ERROR TIMES.</p> <p>VEHICLE EFFECT-COMPOSITE RESCHEDULED. COMPOSITE WAS RE-RUN.</p> <p>CORRECTIVE ACTION-COMPUTER REPLACED.</p>						



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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-ACOUS-A/B COMPUTER	FTA6199/P1-SCO-01-13 COUNTER	COMPOSITE-B FACT	15D 590817	ETR	YES NO		993909
FAILURE MODE-OUT OF SPECIFICATION. TELEMETERED DATA INDICATED THE STATION 8 SENSORS DID NOT UNCOVER DURING TEST.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN-INSUFFICIENT INFORMATION.							
P.U./LOADING-ACOUS-A/B COMPUTER	AZN-27-515/PC-4CO-01-28 COUNTER	COMPOSITE-FACTORY	28D 590810	FACTORY	YES NO	YES ACOUSTICA	993338
FAILURE MODE-OUT OF TOLERANCE. COMPUTER ERROR TIME OUT OF TOLERANCE ON FIRST AND THIRD COMPOSITE TEST. COMPUTER REPLACED AFTER FOURTH TEST.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS-ERROR TIMES NOT RECEIVED IN PROPER ORDER.							
VEHICLE EFFECT-COMPOSITE RESCHEDULED. A RE-RUN OF COMPOSITE WAS REQUIRED.							
CORRECTIVE ACTION-NONE TAKEN. AFTER FOURTH COMPOSITE THE COMPUTER WAS REPLACED.							
P.U./LOADING-ACOUS-A/B COMPUTER	FTA5071/P3-402-00-14 PROBE	FRF	14D 590728	ETR PLUS 1.8	YES YES		993282
FAILURE MODE-PREATURE OPERATION. A FUEL PROBE UNCOVERING SIGNAL OCCURRED AT MAINSTAGE COMPLETE ALTHOUGH ACTUAL FUEL LEVEL WAS APPROXIMATELY 16 INCHES ABOVE THE PROBE. SIGNAL CAUSED BY AN ELECTRICAL TRANSIENT AT IGNITION (OR IMPROPER PRESSURE IN THE FUEL STILLWELL).							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. IMPROPER OUTPUTS WERE GENERATED AS A RESULT OF AN ERRONEOUS FUEL PROBE UNCOVERING SIGNAL.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B COMPUTER	FTA 5089/P3-4CO-01-14	COMPOSITE-B FACT	10 51 0717	ETR	NO NO		
FAILURE MODE-ERRATIC OPERATION. COMPUTER TRIGGERED AT BECO AND BECO DUE TO MOMENTARY FLUCTUATIONS IN THE VEHICLE DC POWER.							
SYSTEM EFFECT-ERRATIC OPERATION. SPURIOUS COMPUTER TRIGGERERS.							
VEHICLE EFFECT-NONE.							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIF DATA SOURCE PART NUMBER	VEHICLE DATE DIF TIME	SITE DIF TIME	PRI OTH	VENDOR NAME VENDOR PART NO
CORRECTIVE ACTION-A FILTER NETWORK WAS INSTALLED PRIOR TO FLIGHT IN THE VEHICLE 28 VDC SUPPLY TO THE ACOUSTICA COMP UTER TO SUBDUCE NEGATIVE TRIGGERS DURING FLIGHT.						
P.U./LOADING-ACOUS-A/B COMPUTER	FTA 3080/PS-4CO-01-14 SENSOR	COMPOSITE-B FACT	14D 590717	ETR	YES NO	
FAILURE MODE-ERRATIC OPERATION. FOUR, INSTEAD OF SIX, SENSOR STATION UNCOVERINGS WERE OBSERVED DURING THE PLUS COUNT T.						
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS. AN IMPROPER NUMBER OF SENSOR STATION UNCOVERING SIGNALS WERE GENERATED BY THE ACOUSTICA SYSTEM.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B COMPUTER	FTAS063/P1-4CO-01-11 SENSOR	COMPOSITE-B F/CT	11D 590708	ETR	YES NO	
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. NO SENSOR UNCOVERINGS DURING PLUS COUNT BECAUSE THE SYSTEM WAS NOT IN THE RESET CONDITION AT UMBILICAL EJECT.						
SYSTEM EFFECT-OPERATION DOES NOT START. NO PROBE UNCOVERINGS DURING PLUS COUNT.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						
P.U./LOADING-ACOUS-A/B COMPUTER	82-413-87-02 OSCILLATOR	CAPTIVE	2D 590818	BYC	YES YES	
FAILURE MODE-FAIL DURING OPERATION. CALCULATED FLOW RATES AND FLOW RATES BASED ON ACCEPTANCE TEST DATA DO NOT AGREE . POSSIBLE CAUSE IS A MALFUNCTION OF THE OSCILLATOR						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. IMPROPER SENSOR UNCOVERY TIMES GIVES ERRONEOUS ANALOG SIGNALS TO THE COMPUTE R.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-NONE.						

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DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRI OTH	VENDOR NAME VENDOR PART NO	
P.U./LOADING-ACOUS-A/B COMPUTER	32-413-B7-02 COUNTER	CAPTIVE	2D 590616	SYC 11.1	YES NO		092256
FAILURE MODE-PREATURE OPERATION. THE ERROR TIME COUNTER RESET 0.66 SECONDS EARLY AT STATION 1 AND 0.40 SECONDS EARLY AT STATION 3.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. THE PU VALVE WAS NOT POSITIONED CORRECTLY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B COMPUTER	32-410-B5-03 COUNTER	CAPTIVE	2D 590328	SYC 11.1	YES NO		092256
FAILURE MODE-FAIL DURING OPERATION. ERROR TIME COUNTER MALFUNCTIONED AT STATIONS 1, 3, AND 4.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL.							
VEHICLE EFFECT-NONE. PU SYSTEM OPERATED OPEN LOOP.							
CORRECTIVE ACTION-UNKNOWN.							
P.U./LOADING-ACOUS-A/B COMPUTER	32-409-B4-02 COUNTER	CAPTIVE	2D 590322	SYC 11.3	YES NO		092257
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. ACOUSTICA COUNTER RESET 0.3 SECONDS TOO SOON AT STATION 1.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNAL. SYSTEM OPERATING OPEN LOOP.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-NONE.							
P.U./LOADING-ACOUS-A/B COMPUTER	WIDE-59-0250-A/1A-302 MULTI-VIBRATOR	CAPTIVE	SC 590327	WTR 1.32	YES NO	YES ACOUSTICA	092252
FAILURE MODE-ERRATIC OPERATION. THE MONOSTABLE MULTI-VIBRATOR REACTED FROM SPURIOUS SIGNALS THOUGHT TO BE FROM WITHIN THE COMPUTER.							
SYSTEM EFFECT-IMPROPER DISCRETE SIGNALS.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN.							

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# DIFFICULTIES REVIEW-PROPELLANT UTIL/LOADING SYSTEM-AIRBORNE

SYSTEM SUB-SYSTEM	TEST/REPORT NUMBER FAILED COMPONENT NAME	DIP DATA SOURCE PART NUMBER	VEHICLE DATE DIP	SITE TIME DIP	PRJ OTH	VENDOR NAME VENDOR PART NO
P.U./LOADING-ACOUS-A/B COMPUTER	A2M-27-207/FC-4CO-DIA-09	COMPOSITE-FACTORY	9D 890314	FACTORY	YES NO	ACOUSTICA NO 50003800
FAILURE MODE-OUT OF TOLERANCE. ACOUSTICA TRANSDUCER ANGULAR DISPLACEMENT DIAL INDICATED TOO HIGH ON ALL TEST POINTS						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. THE COMPUTER OUTPUT GAVE GREATER VALUE POSITIONS THAN THE ERROR CALLED FOR.						
VEHICLE EFFECT-NONE.						
CORRECTIVE ACTION-UNIT REMOVED AND IN/D. REF (IR-878500).						
P.U./LOADING-ACOUS-A/B COMPUTER	14-404-B1-80 P.U. COMPUTER ERROR TIME COUNTER	CAPTIVE	890304	WTR	YES NO	ACOUSTICA NO
FAILURE MODE-FAILED DURING OPERATION. THE ERROR TIME COUNTER FAILED TO OPERATE WHEN UNLOADING SIGNALS FROM SENSOR 8 ET NO. 5 WERE RECEIVED.						
SYSTEM EFFECT-ERRATIC OPERATION.						
VEHICLE EFFECT-NONE. SYSTEM WAS OPEN LOOP.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B COMPUTER	NSTS TEST REPORT 14-404-B1-80 PU COMPUTER	CAPTIVE	890304	WTR	YES NO	ACOUSTICA NO
FAILURE MODE-ERRATIC OPERATION. DATA INDICATED AN INCORRECT SIMULATED PU VALVE POSITION WHEN SIGNALS FROM SENSOR 8 ET NO. 5 WERE RECEIVED.						
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS.						
VEHICLE EFFECT-NONE. SYSTEM WAS OPEN LOOP.						
CORRECTIVE ACTION-UNKNOWN.						
P.U./LOADING-ACOUS-A/B COMPUTER	GOC/ACOUS-001-38/FC-CO-01-0071-020 COMPUTER	COMPOSITE-FACTORY?	7120 85126	FACTORY	NO NO	ACOUSTICA NO
FAILURE MODE- FAIL TO OPERATE. THE ACOUSTICA COMPUTER DID NOT RESPOND TO AGE PROGRAMMED ERROR TIMES FROM STATION NO .6 TO THE END OF TEST THE CAUSE WAS TRACED TO FAILURE OF THE SENSOR SIMULATOR PANEL IN THE AGE.						

GENERAL DYNAMICS  
CONVAIR DIVISION

18 JUN 1966

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P.U./LOADING-ACOUS-A/B COMPUTER	732-403-83-24 COMPUTER	CAPTIVE 80003600-101	24D 59902	BYC 24.75	NO NO	NO ACOUSTICA	899602
FAILURE MODE-FAIL TO OPERATE AT PRESCRIBED TIME. THE ACOUSTICA P.U. COMPUTER FAILED TO INDICATE UNCOVERY OF THE LOZ SENSORS 2, 3, 4, 5 AND 6 AT THE EXPECTED TIMES.							
SYSTEM EFFECT-NONE-OPEN LOOP OPERATION.							
VEHICLE EFFECT-NONE-OPEN LOOP OPERATION.							
CORRECTIVE ACTION-COMPUTER REMOVED FROM VEHICLE AND RETURNED TO ACOUSTICA FOR ENGINEERING EVALUATION. MEANWHILE ANOTHER COMPUTER WAS INSTALLED.							
P.U./LOADING-ACOUS-A/B COMPUTER	A2H-27-313/PC-4CO-05-28 SENSOR	COMPOSITE-FACTORY	28D	FACTORY	YES NO	ACOUSTICA	899587
FAILURE MODE-OUT OF TOLERANCE. ACOUSTICA SENSOR ERROR READINGS WERE OUT OF TOLERANCE.							
SYSTEM EFFECT-IMPROPER ANALOG SIGNALS. ERROR TIMES WERE OUT OF TOLERANCE.							
VEHICLE EFFECT-COMPOSITE RESCHEDULED. COMPOSITE RE-RAN.							
CORRECTIVE ACTION-COMPUTER REPLACED.							
P.U./LOADING-ACOUS-A/B COMPUTER COMPARTOR	60C/ACUS-001-57/PC-CO-01-0071-021 COMPUTER COMPARTOR-OSCILLATOR	COMPOSITE-FACTORY	7121 660124	FACTORY	NO NO	ACOUSTICA NO 102460-3	899511
FAILURE MODE-ERRATIC OPERATION. TIME SHARED OSCILLATOR OUTPUT OF THE ACOUSTICA COMPUTER COMPARTOR-TLM MEASUREMENT Y134V) INDICATED ERRATIC OPERATION DURING THE DECAY OF THE LOZ SIGNAL AT STATION NO.1, DUE TO AN AGE MALFUNCTION- IN PROPER LOZ SHIFT VOLTS RECOVERY)							
P.U./LOADING-ACOUS-A/B COMPUTER COMPARTOR	FTA6463/PS-4CO-01-43	COMPOSITE-B FACT	43D 591229	ETR	YES NO		899255
FAILURE MODE-OUT OF SPECIFICATION. TELEMETERED DATA INDICATED ABNORMAL OPERATION OF THE FUEL SIDE OF THE SYSTEM. THE FUEL MONOSTABLE WAS NOT TRIGGERED AT STATIONS 2 AND 4. AT STATION 3 THE FUEL MONOSTABLE WAS TRIGGERED 4 SECONDS LATER THAN EXPECTED, AND AT STATIONS 5 AND 6 THE FUEL MONOSTABLE WAS TRIGGERED 2 AND 1.8 SECONDS LATE RESPECTIVELY.							
SYSTEM EFFECT-ERRATIC OPERATION. PERFORMANCE OF SYSTEM WAS UNSATISFACTORY.							
VEHICLE EFFECT-NONE.							
CORRECTIVE ACTION-UNKNOWN-INSUFFICIENT INFORMATION.							

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